

TOSHIBA

FILE NO. 050-200630GR

SERVICE MANUAL

LCD Color Television

20VL66C/T/H/M/R/E/A

20VL65R

20DL76

The above models are classified as green products (*1), as indicated by underlined serial numbers. This Service Manual describes replacement parts for the green products. When repairing these green Products, use the parts described in this manual and lead-free solder (*2)

For (*1) and (*2), see the next page.

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(*1)

GREEN PRODUCT PROCUREMENT

The EC is actively promoting the WEEE & RoHS Directives that define standards for recycling and reuse of Waste Electrical and Electronic Equipment and for the Restriction of the use of certain Hazardous Substances. From July 1, 2006, the RoHS Directive will prohibit any marketing of new products containing the restricted substances.

Increasing attention is given to issues related to the global environmental. Toshiba Corporation recognizes environmental protection as a key management tasks, and is doing its utmost to enhance and improve the quality and scope of its environmental activities. In line with this, Toshiba proactively promotes Green Procurement, and seeks to purchase and use products, parts and materials that have low environmental impacts.

Green procurement of parts is not only confined to manufacture. The same green parts used in manufacture must also be used as replacement parts.

(*2)

LEAD-FREE SOLDER

This product is manufactured using lead-free solder as a part of a movement within the consumer products industry at large to be environmentally responsible. Lead-free solder must be used in the servicing and repair of this product.

WARNING

This product is manufactured using lead free solder.

DO NOT USE LEAD BASED SOLDER TO REPAIR THIS PRODUCT !

The melting temperature of lead-free solder is higher than that of leaded solder by 86°F to 104°F (30°C to 40°C). Use of a soldering iron designed for lead-based solders to repair product made with lead-free solder may result in damage to the component and or PCB being soldered. Great care should be made to ensure high-quality soldering when servicing this product — especially when soldering large components, through-hole pins, and on PCBs — as the level of heat required to melt lead-free solder is high.

SERVICE INSTRUCTIONS

CHAPTER 1 GENERAL ADJUSTMENTS

SAFETY INSTRUCTIONS

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" INSTRUCTIONS BELOW.

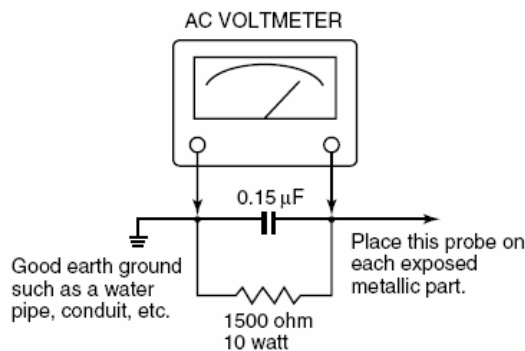
1. An isolation transformer should be connected in the power line between the receiver and the AC line before any service is performed on the receiver.
2. When replacing a chassis in the cabinet, always be certain that all the protective devices are put back in place, such as; nonmetallic control knobs, insulating covers, shields, isolation resistor-capacitor network etc.
3. Always advise users to keep children away. There is danger of injury to children from tools, disassembled products, etc.
4. Always disconnect the power plug before starting work whenever power is not required. Failure to disconnect the power plug before starting work can result in electrical shock.
5. Depending on the model, use an insulation transformer or wear gloves when servicing with the power on, and disconnect the power plug to avoid electrical shock when replacing parts. In some cases, alternating current is also impressed in the chassis, so electrical shock is possible if the chassis is contacted with the power on.
6. Always use the replacement parts specified for the particular model when making repairs. The parts used in products have the necessary safety characteristics such as inflammability, voltage resistance, etc.; therefore, use only replacement parts that have these same characteristics. Use only the specified parts when the mark is included in a circuit diagram or parts list.
7. Parts mounting and routing of the wiring should be the same as that used originally. For safety purposes, insulating materials such as tubing or tape is sometimes used and printed circuit boards are sometimes mounted floating. Also make sure that wiring is routed and clamped to avoid parts that generate heat and which use high voltage. Always follow the original scheme.
8. After a repair has been completed, reassemble all disassembled parts, and route and reconnect the wiring, in accordance with the original scheme. Do not allow internal wiring to be pinched by cabinets, panels, etc. Any error in reassembly or wiring can result in electrical leakage, flame, etc., and may be hazardous.
9. Never remodel the product in any way. Remodeling can result in improper operation, malfunction, or electrical leakage and flame, which may be hazardous.

SAFETY PRECAUTION

WARNING : Service should not be attempted by anyone unfamiliar with the necessary precautions on this receiver. The following are the necessary precautions to be observed before servicing this chassis.

Connect a 1500 ohm 10 watt resistor, paralleled by a 0.15 μ F, AC type capacitor, between a known good earth ground (water pipe, conduit, etc.) and the exposed metallic parts, one at a time. Measure the AC voltage across the combination of 1500 ohm resistor and 0.15 μ F capacitor. Reverse the AC plug at the AC outlet and repeat AC voltage measurements for each exposed metallic part. Voltage measured must not exceed 0.675 volts rms. This corresponds to 0.45 milliamp. AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.

10. Before returning the set to the customer, always perform an AC leakage current check on the exposed metallic parts of the cabinet, such as antennas, terminals, screwheads, metal overlays, control shafts etc. to be sure the set is safe to operate without danger of electrical shock. Plug the AC line cord directly into a 120V AC outlet (do not use a line isolation transformer during this check). Use an AC voltmeter having 5000 ohms per volt or more sensitivity in the following manner:



PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the international hazard symbols on the schematic diagram and the parts list.

Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire, or other hazards.

HANDLING THE LCD MODULE

HANDLING THE LCD MODULE

Safety Precautions

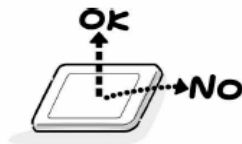
In the event that the screen is damaged or the liquid crystal (fluid) leaks, do not breathe in or drink this fluid. Also, never touch this fluid.

Such actions could cause toxicity or skin irritation. If this fluid should enter the mouth, rinse the mouth thoroughly with water. If the fluid should contact the skin or clothing, wipe off with alcohol, etc., and rinse thoroughly with water. If the fluid should enter the eyes, immediately rinse the eyes thoroughly with running water.

Precautions for Handling the LCD Module

The LCD module can easily be damaged during disassembly or reassembly; therefore, always observe the following precautions when handling the module.

1. When attaching the LCD module to the LCD cover, position it appropriately and fasten at the position where the display can be viewed most conveniently.



2. Carefully align the holes at all four corners of the LCD module with the corresponding holes in the LCD cover and fasten with screws. Do not strongly push on the module because any impact can adversely affect the performance. Also use caution when handling the polarized screen because it can easily be damaged.

CAUTION

The metal edges of the LCD module are sharp, so use caution to avoid injury.



3. If the panel surface becomes soiled, wipe with cotton or a soft cloth. If this does not remove the soiling, breathe on the surface and then wipe again.

If the panel surface is extremely soiled, use a CRT cleaner as a cleaner. Wipe off the panel surface by drop the cleaner on the cloth. Do not drop the cleaner on the panel. Pay attention not to scratch the panel surface.



4. Leaving water or other fluids on the panel screen for an extended period of time can result in discoloration or stripes. Immediately remove any type of fluid from the screen.



5. Glass is used in the panel, so do not drop or strike with hard objects. Such actions can damage the panel.



6. CMOS-LSI circuitry is used in the LCD module, so avoid damage due to static electricity. When handling the module, use a wrist ground or anchor ground.



7. Do not expose the LCD module to direct sunlight or strong ultraviolet rays for an extended period of time.



8. Do not store the LCD module below the temperature conditions described in the specifications. Failure to do so could result in freezing of the liquid crystal due to cold air or loss of resilience or other damage.



9. Do not disassemble the LCD module. Such actions could result in improper operation.



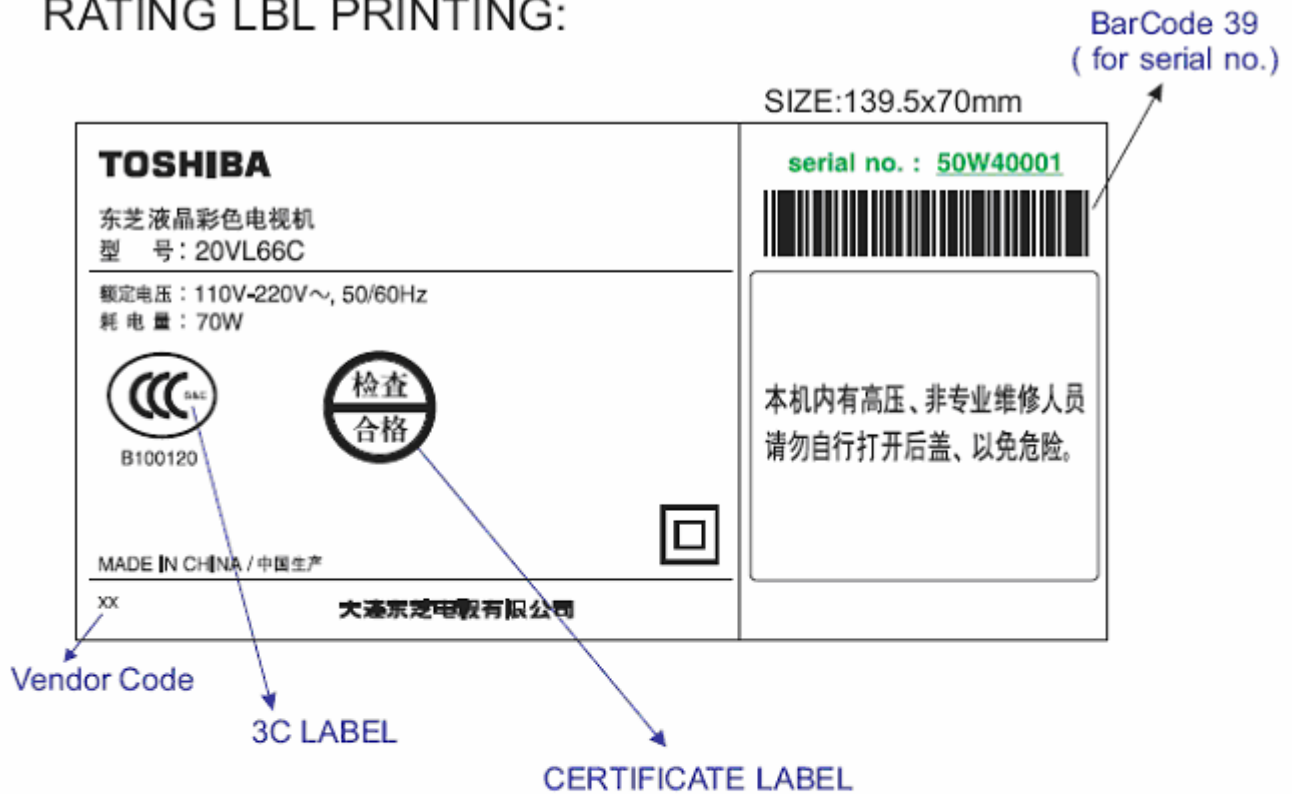
10. When transporting the LCD module, do not use packing containing epoxy resin (amine) or silicon resin (alcohol or oxim). The gas generated by these materials can cause loss of polarity.



Appearance Description

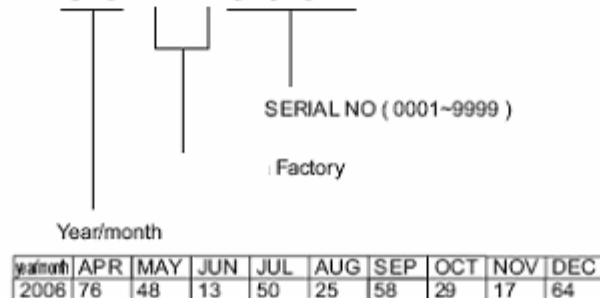
- 20VL66C

RATING LBL PRINTING:



***PRINTING TEXT TYPE: Switzerland, H=10 point

S/N:50W40001



- RATING LBL PRINTING:



S/N:13W40001

Factory

Year/month

yearmonth	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2006	76	48	13	50	25	58	29	17	64

- 20VL66H

RATING LBL PRINTING:

SIZE:139.5x70mm

TOSHIBA LCD COLOR TV MODEL NO. : 20VL66H POWER SUPPLY : 100-240V~ 50/60Hz 70W serial no. : <u>13W40001</u>   TOSHIBA CORPORATION XX	CAUTION! LIVE PARTS ARE MADE ACCESSIBLE WHEN THE COVER IS REMOVED.
--	---

Vendor Code

BarCode 128
(for serial no.)

***PRINTING TEXT TYPE: Switzerland, H=10 point

S/N:13W40001

Year/month

SERIAL NO (0001~9999)

Factory

year/month	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2006	76	48	13	50	25	58	29	17	64

- 20VL66M

RATING LBL PRINTING:

SIZE:139.5x70mm

TOSHIBA LCD COLOR TV MODEL NO. : 20VL66M POWER SUPPLY : 220-240V~ 50/60Hz 70W serial no. : <u>13W40001</u>   TOSHIBA CORPORATION MADE IN CHINA	CAUTION! LIVE PARTS ARE MADE ACCESSIBLE WHEN THE COVER IS REMOVED.
--	---

Vendor Code

BarCode 128
(for serial no.)

***PRINTING TEXT TYPE: Switzerland, H=10 point

S/N:13W40001

Year/month

year/month	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2006	76	48	13	50	25	58	29	17	64




SERIAL NO (0001~9999)

Factory

- 20VL66R

RATING LBL PRINTING:

SIZE: 139.5x70mm

<p>TOSHIBA LCD COLOR TV MODEL NO. : 20VL66R POWER SUPPLY : 220-240V~ 50Hz 70W</p> <hr/> <p>Жидкокристаллический цветной телевизор Модель No. : 20VL66R Переменное напряжение : 220-240В ~, 50Гц Потребляемая мощность : 70 Вт serial no. : 13W40001</p>  <div style="text-align: right;">   </div> <hr/> <p>TOSHIBA CORPORATION MADE IN CHINA / Сделано в Китае</p>	<p>WARNING: DANGEROUS VOLTAGE INSIDE</p> <p>DO NOT REMOVE THE COVER. INTERNAL ADJUSTMENTS SHOULD ONLY BE MADE BY A COMPETENT TV TECHNICIAN.</p> <hr/> <p>ОСТОРОЖНО: ВЫСОКОЕ НАПРЯЖЕНИЕ ВНУТРИ!</p> <p>Не снимайте крышку аппарата Внутренние регулировки должны выполняться только квалифицированным ТВ-специалистом</p>
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Vendor Code

BarCode 128
(for serial no.)

***PRINTING TEXT TYPE: Switzerland, H=10 point

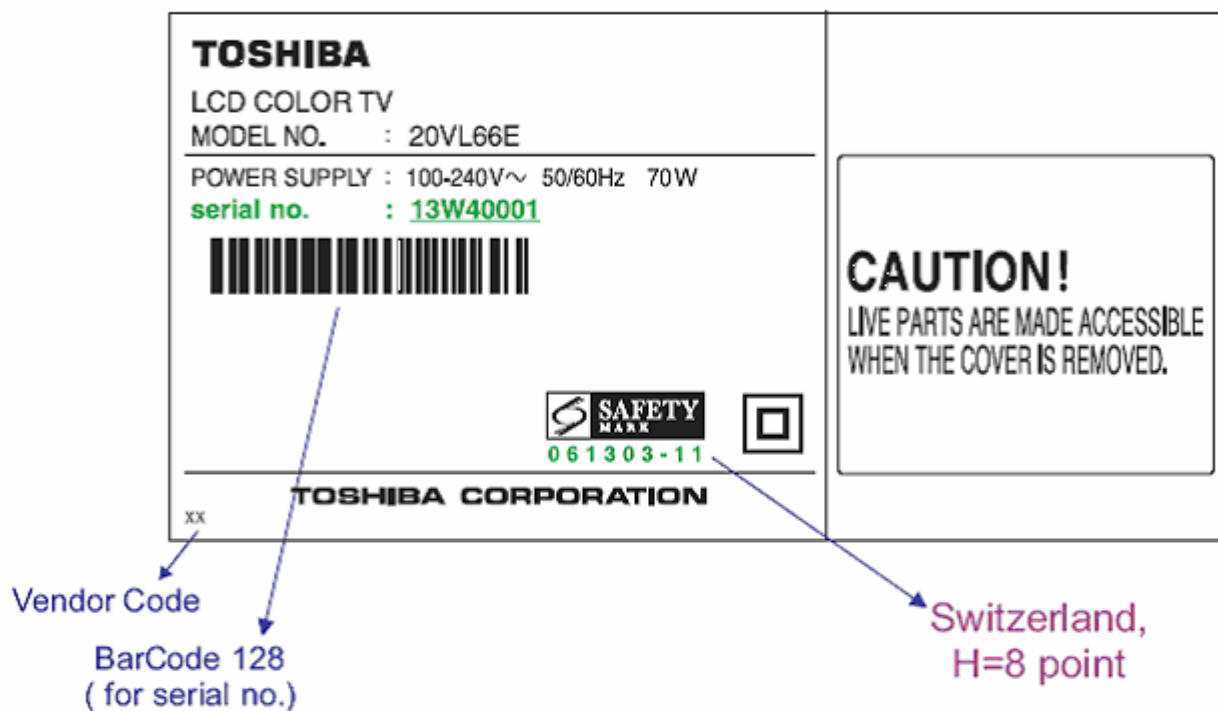
S/N:13W40001

Year/month		Factory		SERIAL NO (0001~9999)							
year/month	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC		
2006	76	48	13	50	25	58	29	17	64		

- 20VL66E

RATING LBL PRINTING:

SIZE:139.5x70mm



***PRINTING TEXT TYPE: Switzerland, H=10 point

S/N:13W40001

Year/month

Factory

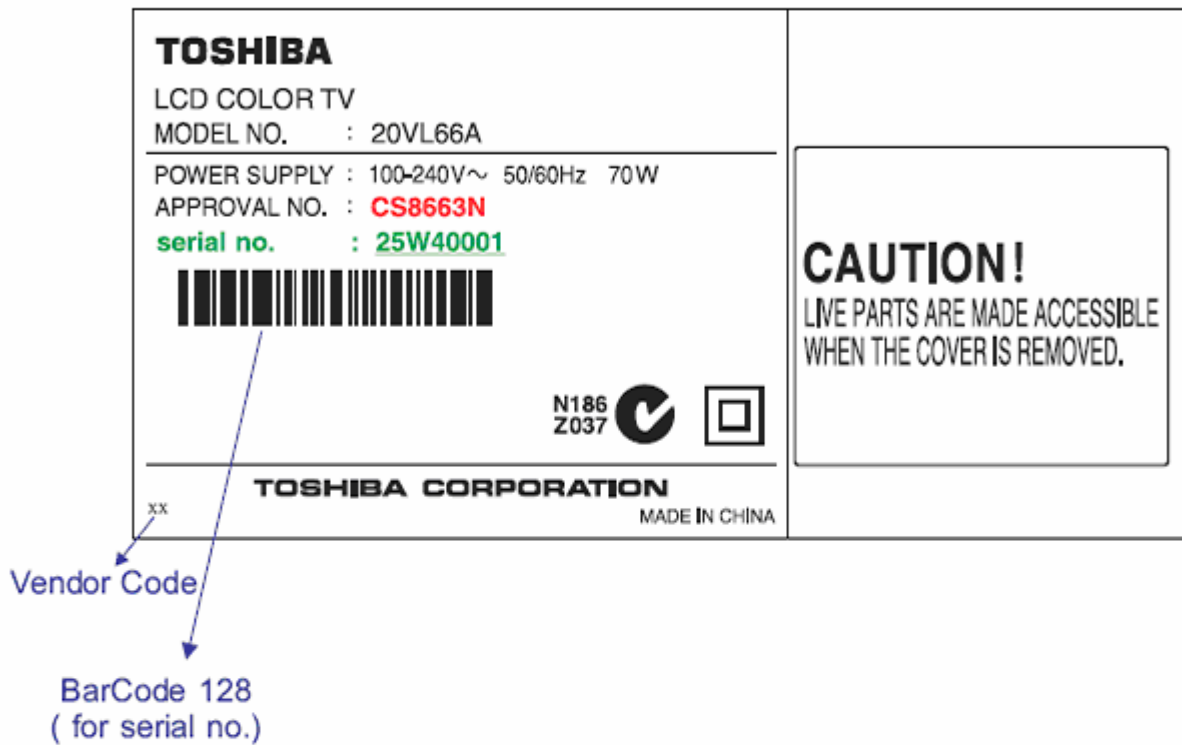
SERIAL NO (0001~9999)

year/month	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2006	76	48	13	50	25	58	29	17	64

- 20VL66A

RATING LBL PRINTING:

SIZE:139.5x70mm





***PRINTING TEXT TYPE: Switzerland, H=10 point

S/N:25W40001

Year/month		Factory		SERIAL NO (0001~9999)					
year/month	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2006	76	48	13	50	25	58	29	17	64

- 20VL65R

RATING LBL PRINTING:

TOSHIBA LCD COLOR TV MODEL NO. : 20VL65R POWER SUPPLY : 220-240V~ 50Hz 70W Жидкокристаллический цветной телевизор Модель No. : 20VL65R Переменное напряжение : 220-240В ~, 50Гц Потребляемая мощность : 70 Вт serial no. : 13W40001   TOSHIBA CORPORATION MADE IN CHINA / Сделано в Китае		WARNING: DANGEROUS VOLTAGE INSIDE DO NOT REMOVE THE COVER. INTERNAL ADJUSTMENTS SHOULD ONLY BE MADE BY A COMPETENT TV TECHNICIAN. ОСТОРОЖНО: ВЫСОКОЕ НАПРЯЖЕНИЕ ВНУТРИ! Не снимайте крышку аппарата. Внутренние регулировки должны выполняться только квалифицированным ТВ-специалистом.
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Vendor Code

***PRINTING TEXT TYPE: Switzerland, H=10 point

BarCode 128
(for serial no.)

S/N:13W40001

SERIAL NO (0001~9999)

Factory

Year/month

year/month	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2006	76	48	13	50	25	58	29	17	64

- 20DL76

Rating lbl printing:

70.0 mm

139.5 mm

FACTORY ID: S=BQOS

BARCODE 39 (QC103000001)

VENDOR CODE

COUNTRY CODE (T= TAIWAN / C= CHINA)

S/N: QC103000001

COMPANY

MODEL (20DL76=103)

SERIAL NO (000001~999999)

UL LISTED TELEVISION RECEIVER
ASSEMBLED IN CHINA / ASSEMBLE AU CHINE

MODEL/MODELE NO. **20DL76**

~120V 60Hz
AVERAGE POWER

AMPS MAX
WATTS **70W**

CABLE COMPATIBLE TELEVISION APPARATUS TELEVISION CABLECOMPATIBLE, CANADA

MANUFACTURED : **June 2006**

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS:
(1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND
(2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRABLE OPERATION.

FC

U.S. Patent Nos. 4,631,603; 4,619,096; 4,907,093; 5,315,448 and 6,516,132.

DISTRIBUTED BY : TOSHIBA AMERICA CONSUMER PRODUCTS, L.L.C. 82 TOTOWA RD, WAYNE, NJ 07470 U.S.A.
TOSHIBA OF CANADA Ltd. 191 McHabb St., Markham, Ontario, L3R8H2, Canada

WARNING: If you decide to wall mount this television, always use a UL-approved wall bracket appropriate for the size and weight of this television. The use of any wall bracket other than a UL-approved wall bracket appropriate for the size and weight of this television for wall mounting this television could result in serious bodily injury and/or property damage.

AVIS : RISQUE DE CHOC ELECTRIQUE-NE PAS OUVRIR

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

RISK OF ELECTRIC SHOCK DO NOT OPEN

SERIAL No. : QC103000001 S

ATENCION: Si decide montar este televisor en la pared, siempre utilice una m3nula aprobada por la UL, apropiada para el tama1o y el peso del mismo. La utilizaci3n de una m3nula para montaje en pared que no sea aprobada por la UL, y que no sea apropiada para el tama1o y el peso de este televisor, puede ocasionar serias lesiones corporales y/o da1os materiales.

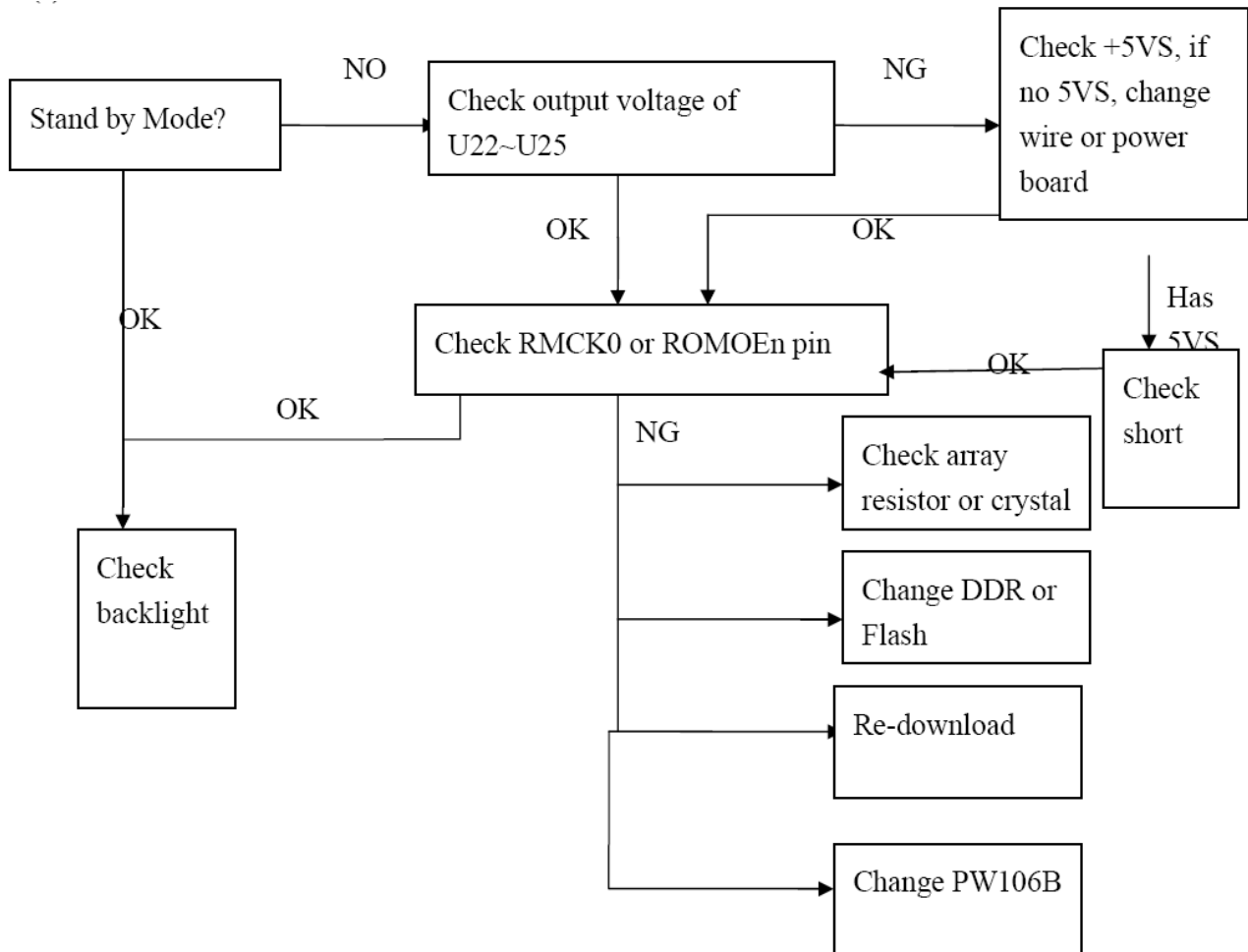
Trouble Shooting Guide

1. Introduction

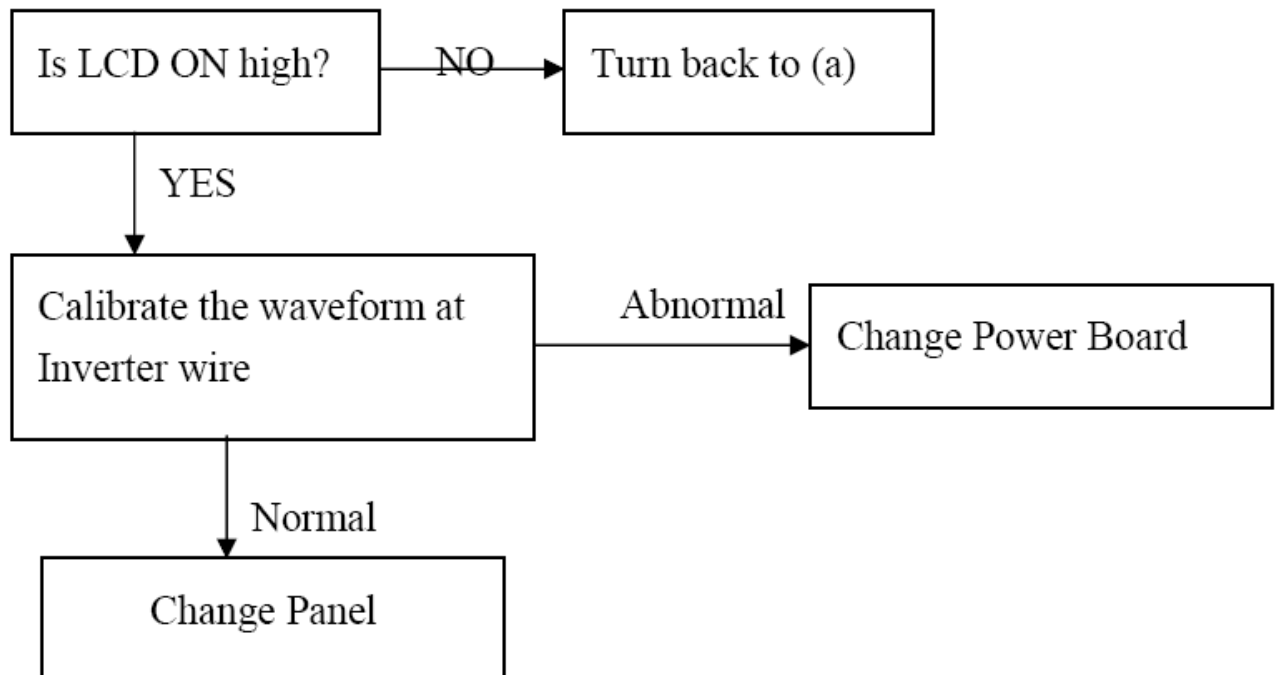
This document is prepared to be a guide to repair trouble sets, some problems happen more frequently are taken as example in it. Those are turn on fail, no signal, no sound, etc.

2. Problems

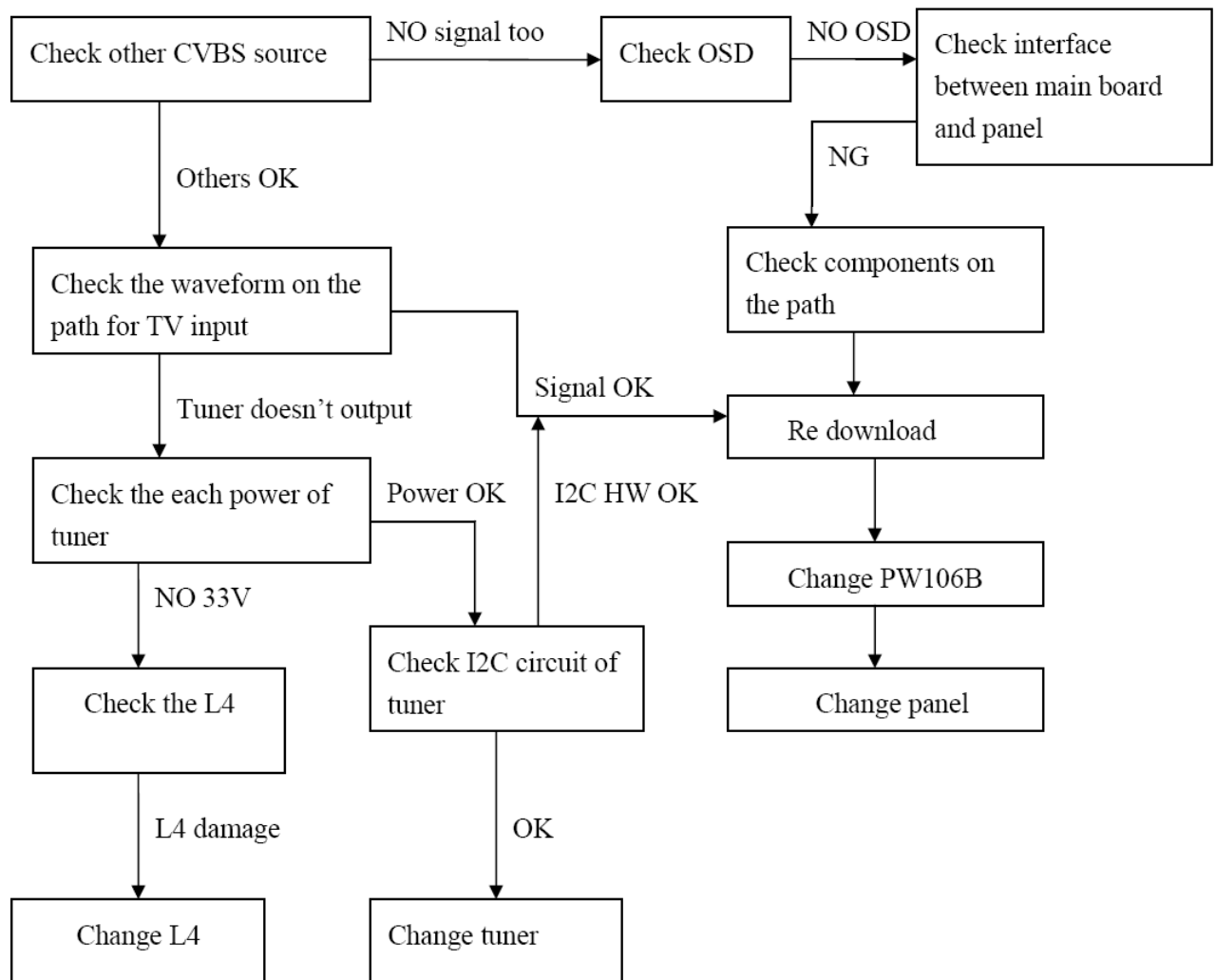
(a) Turn on fail



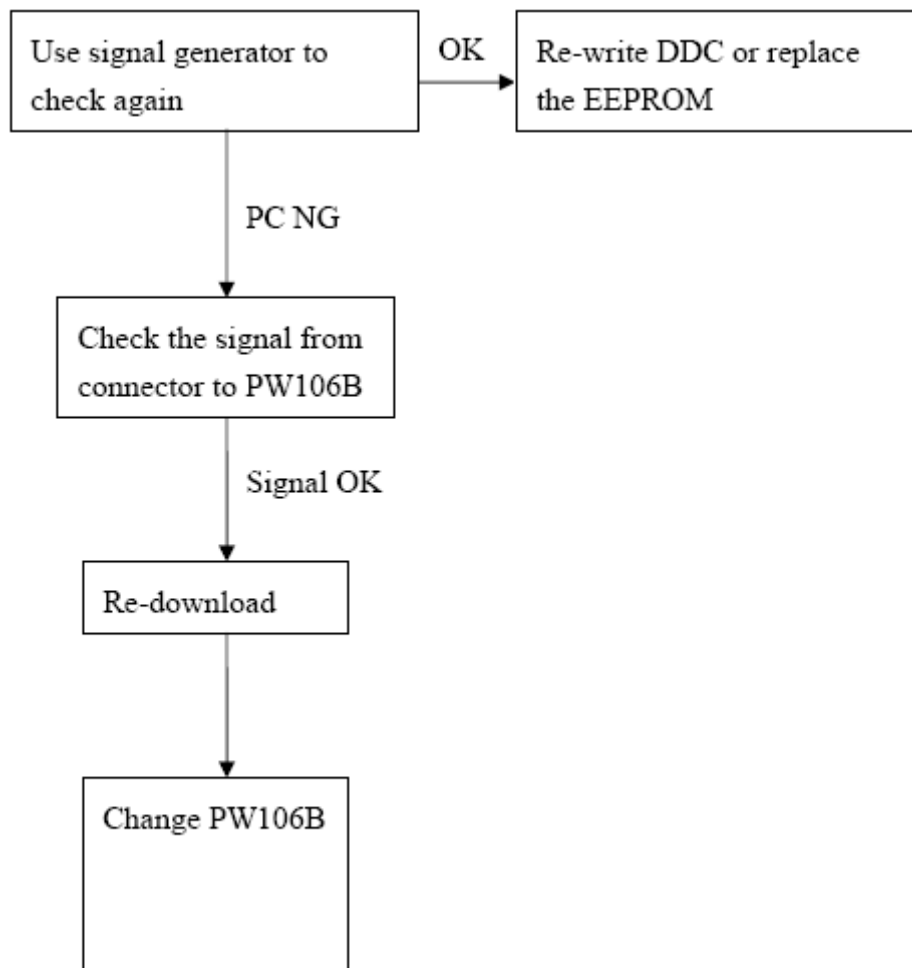
(b) NO backlight



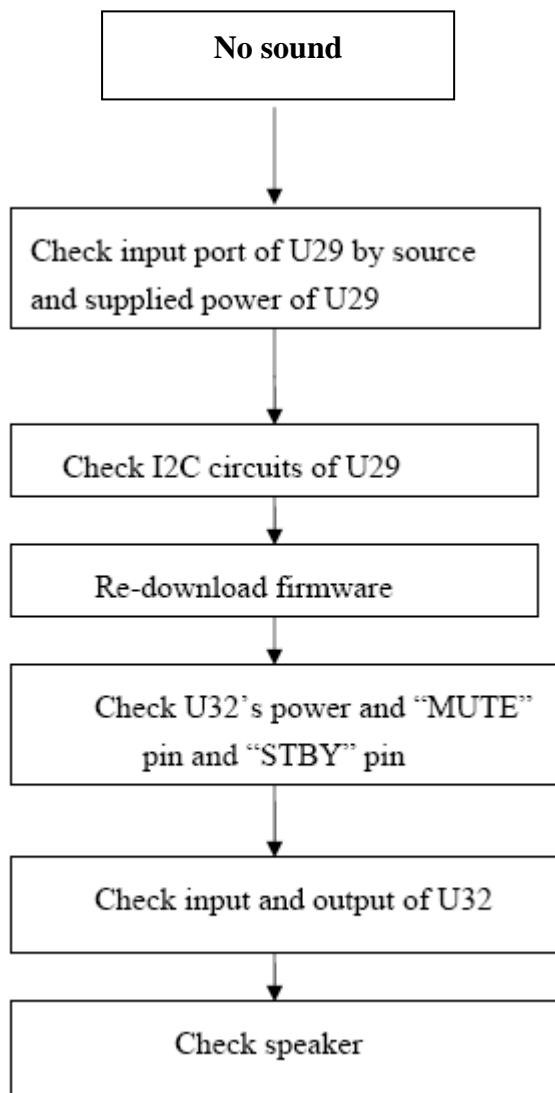
© TV no signal



(D) PC no signal

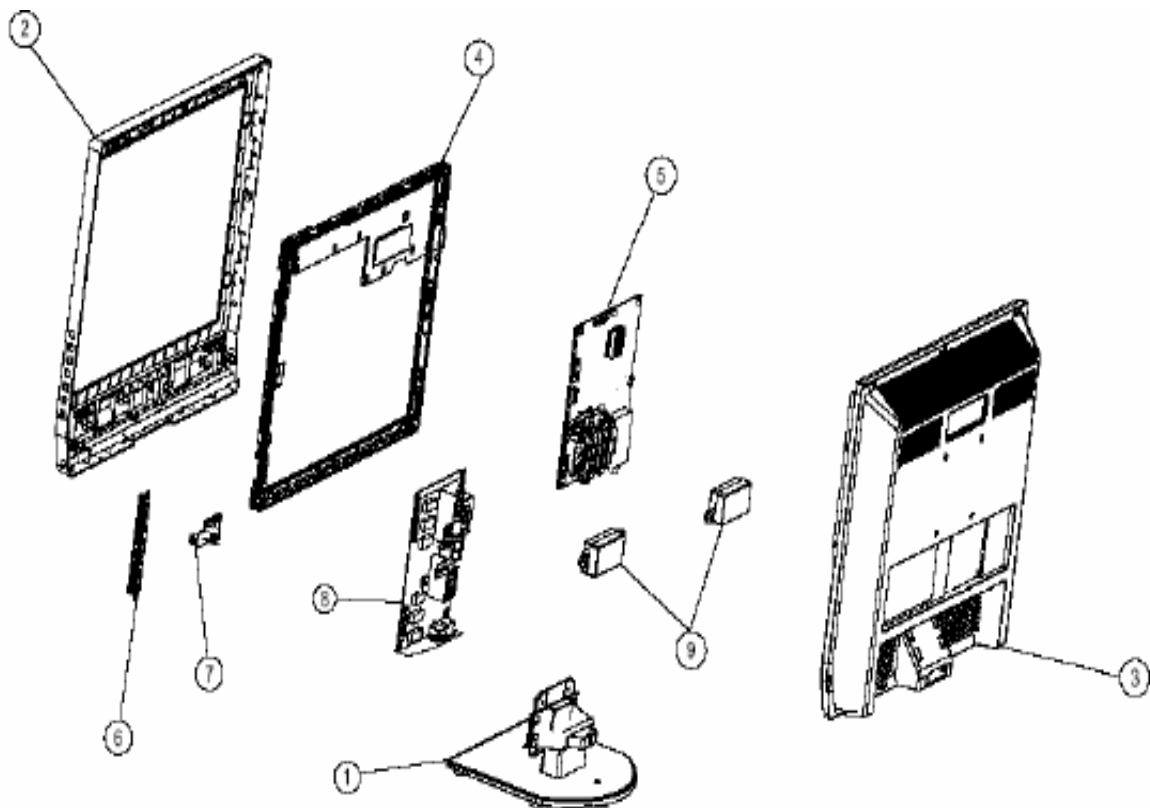


(E) No sound

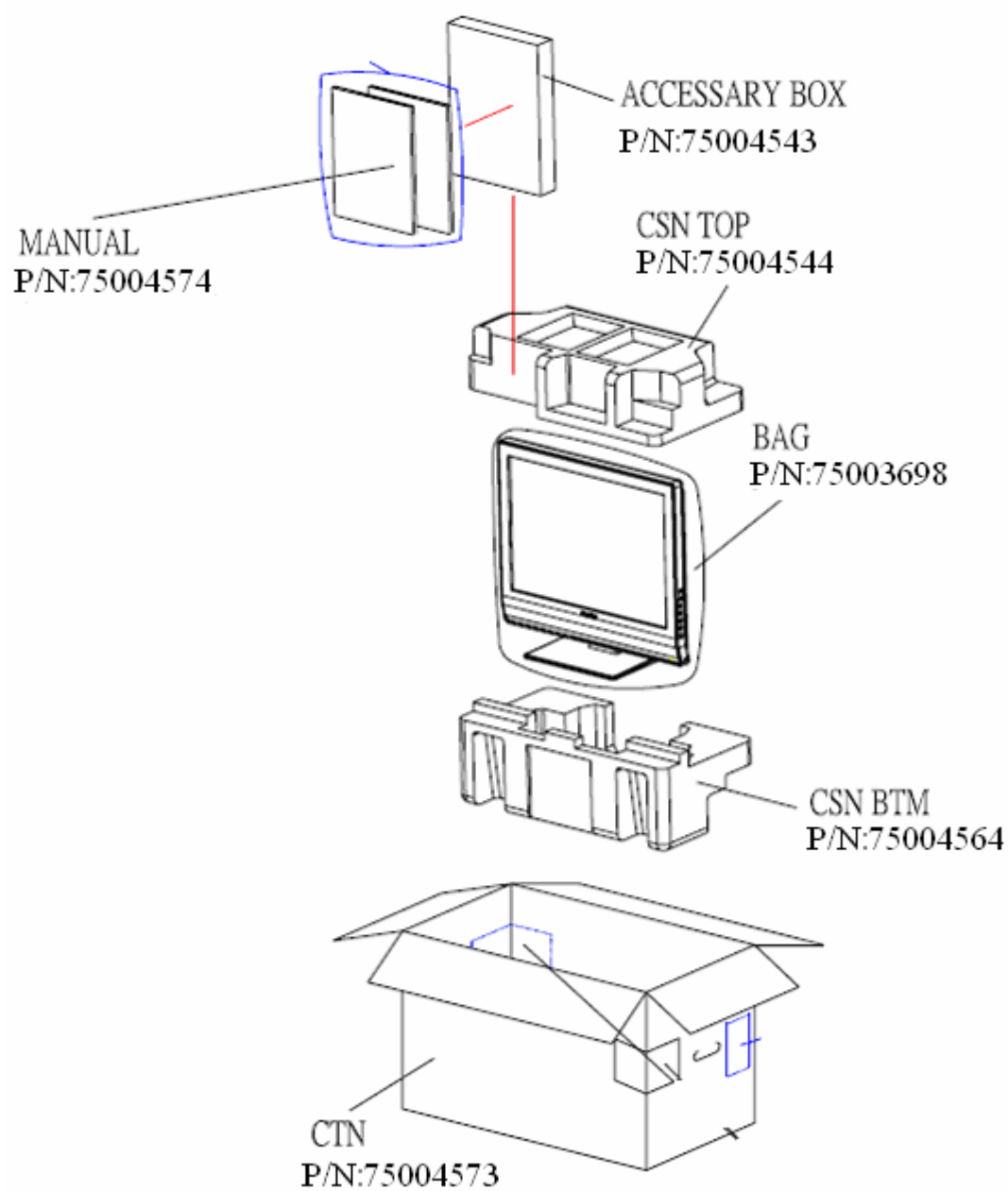


PACKING EXPLODED VIEW

ITEM	Model	P/N	Description
1	20VL66C/T/H/M/R/E/A/20DL76	75004552	ASSY BASE T20VV6
2	20VL66C/T/H/M/R/E/A	75004569	ASSY BEZEL T20VV6
	20DL76	75004551	
3	20VL66C/T/H/M/R/E/A	75004570	ASSY REAR CVR T20VV6
	20DL76	75004553	
4	20VL66C/T/H/M/R/E/A/20DL76	75004548	LCDM A201SN02-V5 AUO
5	20VL66C/T/H/M/R/E/A	75004566	PCBA MAIN BD MI T20VV8 GA/CN
	20DL76	75004547	
6	20VL66C/T/H/M/R/E/A/20DL76	75003706	PCBA KEYPAD BD T20WH8 MI
7	20VL66C/T/H/M/R/E/A/20DL76	75003707	PCBA IR BD T20WHB MI
8	20VL66C/T/H/M/R/E/A/20DL76	75004843	PCBA PWR BD 70W EADP-70AF
9	20VL66C/T/H/M/R/E/A/20DL76	75005170	SPK*2 160HM 235/590MM PS-000



- 20VL66C



1. CTN LBL PRINTING:



(QTY=2 PCS)

EAN CODE

- 1. TEXT TYPE: Switzerland
- 2. SIZE: 16 point

2. SERIAL LBL PRINTING:



size:50x12mm

- 1. TEXT TYPE: Switzerland / 文鼎特明簡
- 2. SIZE: 15 point

- 20VL66T

CTN LBL PRINTING:

Size: 175x100mm

20VL66T

20VL66T



EAN CODE



EAN CODE

1. TEXT TYPE: SwitzerlandBlack
2. SIZE: 44 point

- 20VL66H

CTN LBL PRINTING:

Size: 175x100mm

20VL66H 20VL66H



EAN CODE



EAN CODE

1. TEXT TYPE: SwitzerlandBlack
2. SIZE: 44 point

- 20VL66M

CTN LBL PRINTING:

Size: 175x100mm

20VL66M

20VL66M

MADE IN CHINA



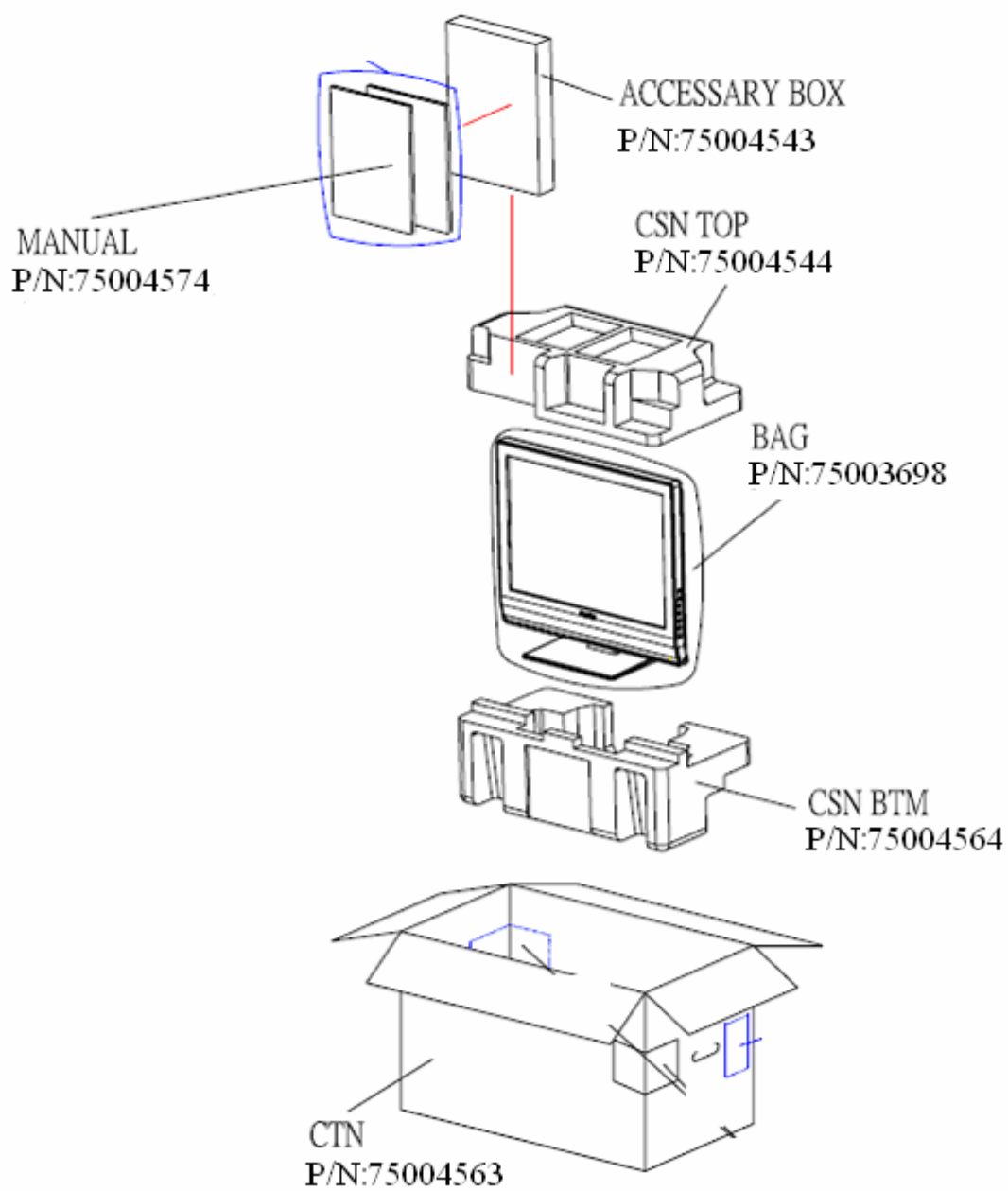
EAN CODE



EAN CODE

1. TEXT TYPE: SwitzerlandBlack
2. SIZE: 44 point and 12 point

- 20VL66E



CTN LBL PRINTING:

Size: 175x100mm

20VL66E

20VL66E



EAN CODE



EAN CODE

1. TEXT TYPE: SwitzerlandBlack
2. SIZE: 44 point

- 20VL66A

CTN LBL PRINTING:

Size: 175x100mm

20VL66A

20VL66A

MADE IN CHINA



EAN CODE



EAN CODE

1. TEXT TYPE: SwitzerlandBlack
2. SIZE: 44 point and 12 point

- 20VL65R

CTN LBL PRINTING:

TEXT TYPE: SwitzerlandBlack, 44 point

Size: 175x100mm



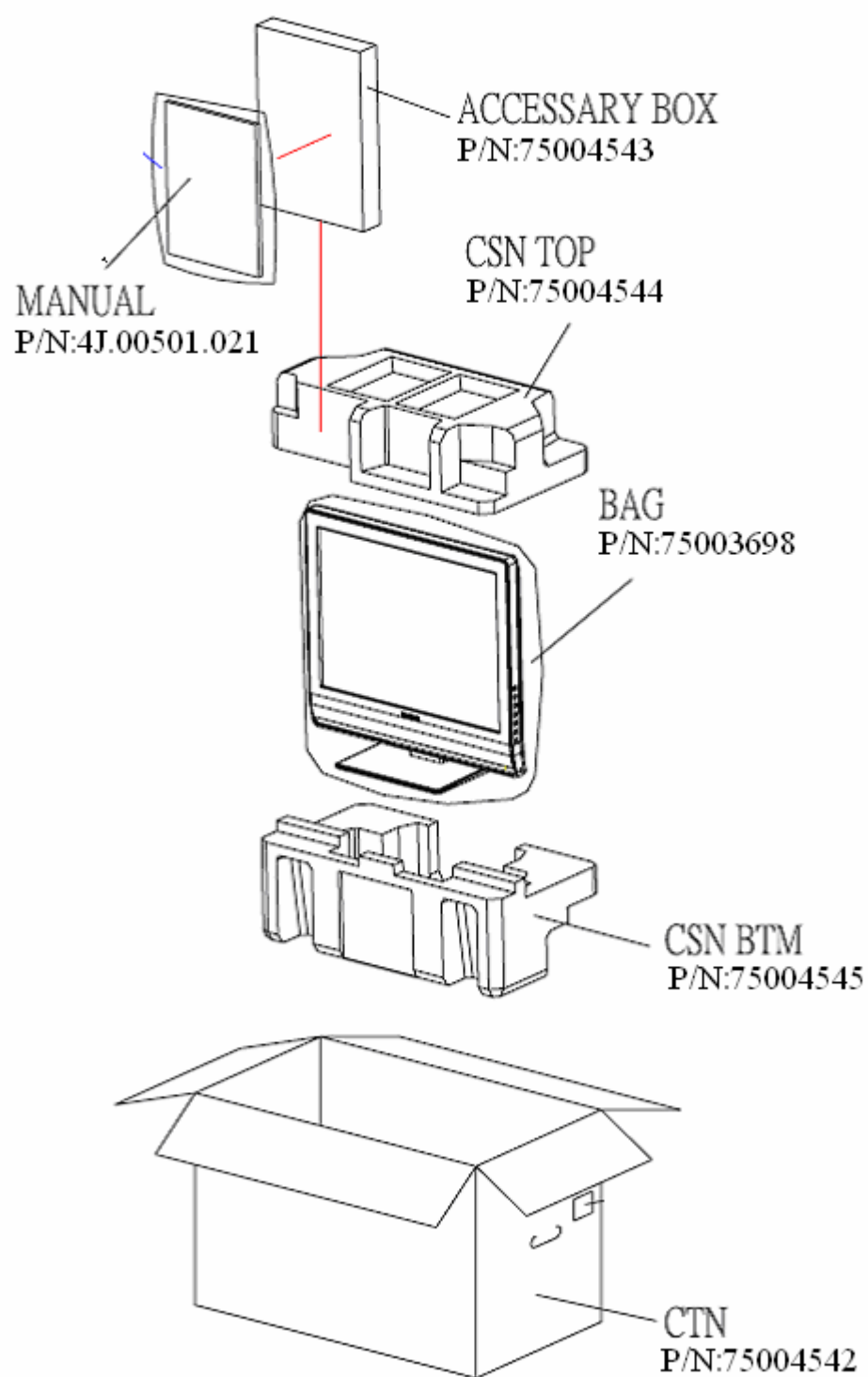
EAN CODE

EAN CODE

Цветной телевизор ТОШИБА
Модель 20VL65R
Переменное напряжение 220-240В, 50Гц
Сделано в Китае
Toshiba Singapore PTE Ltd.

TEXT TYPE: Switzerland, 7 point

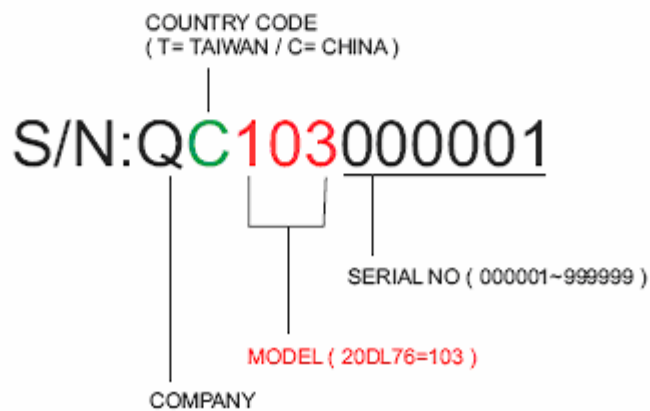
- 20DL76



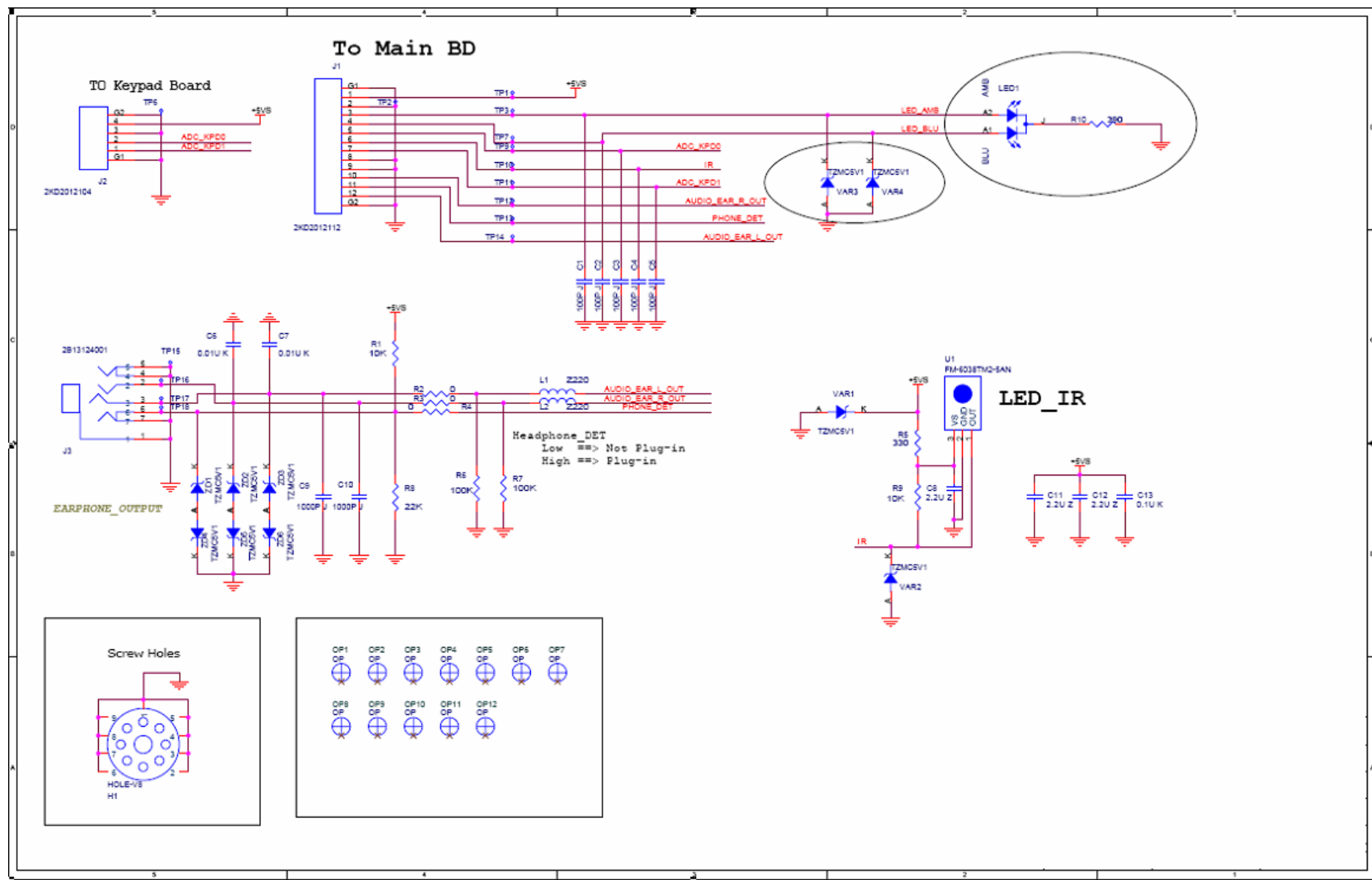
CTN LBL PRINTING



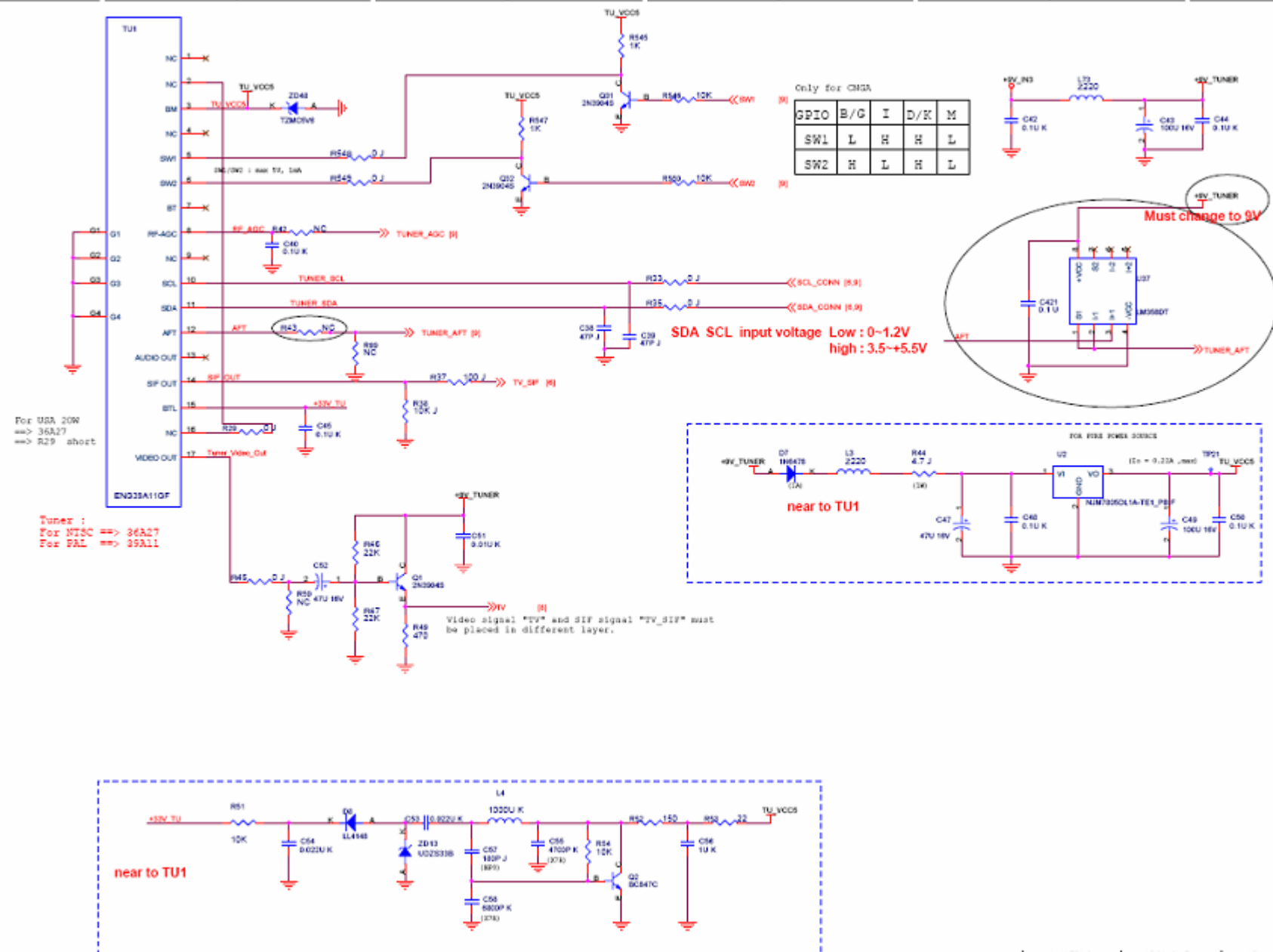
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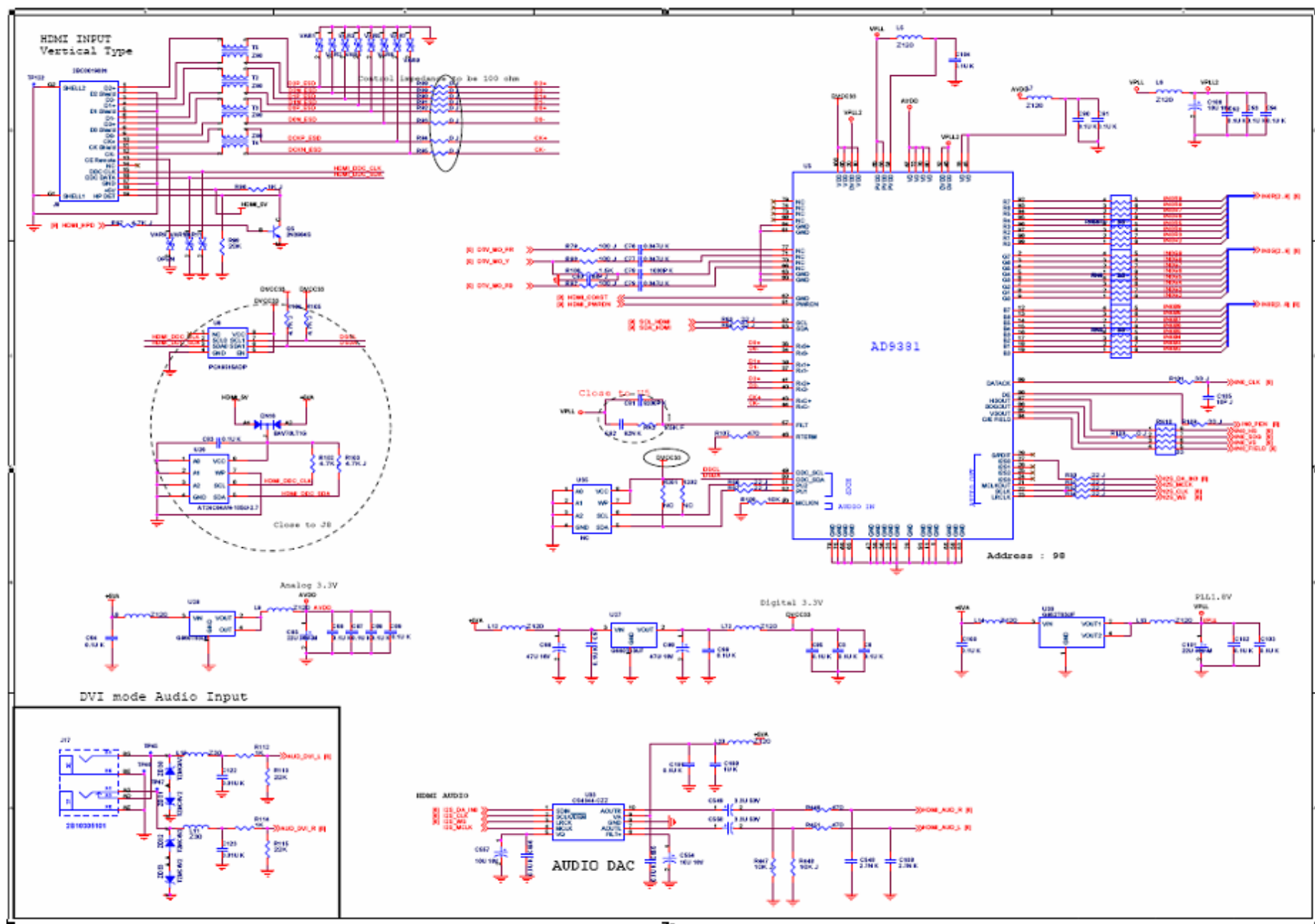


CIRCUIT BLOCK DIAGRAM

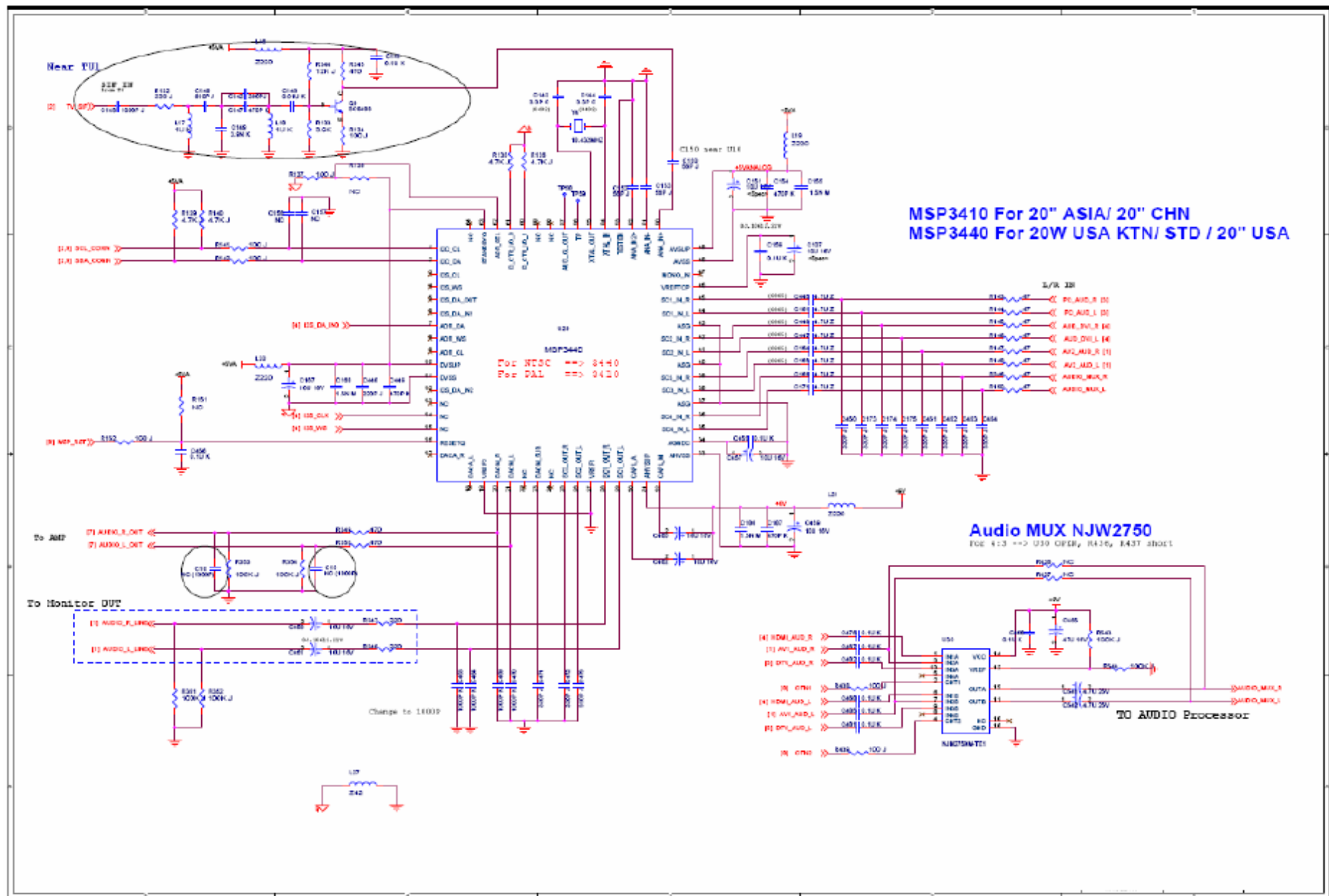


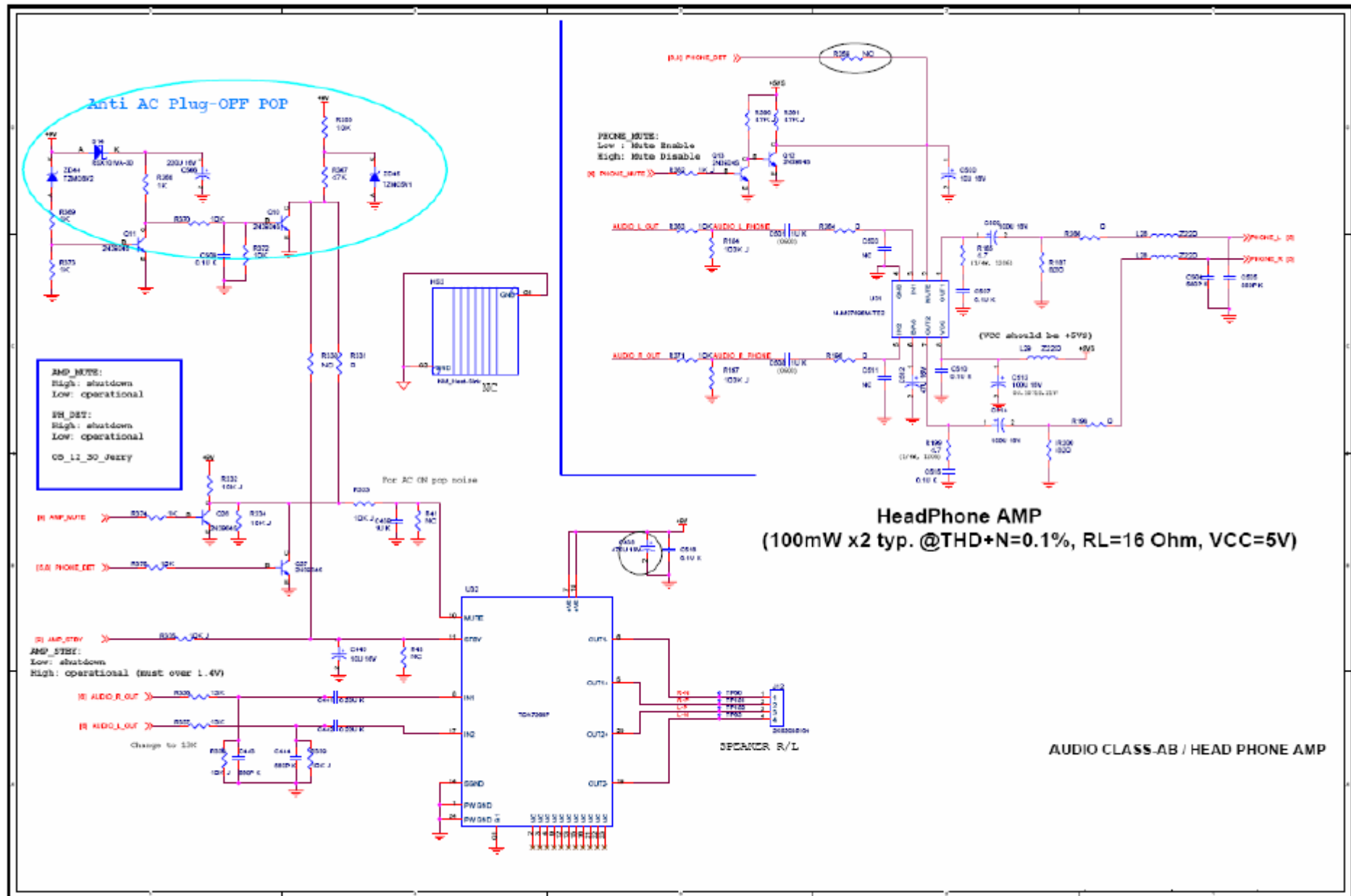


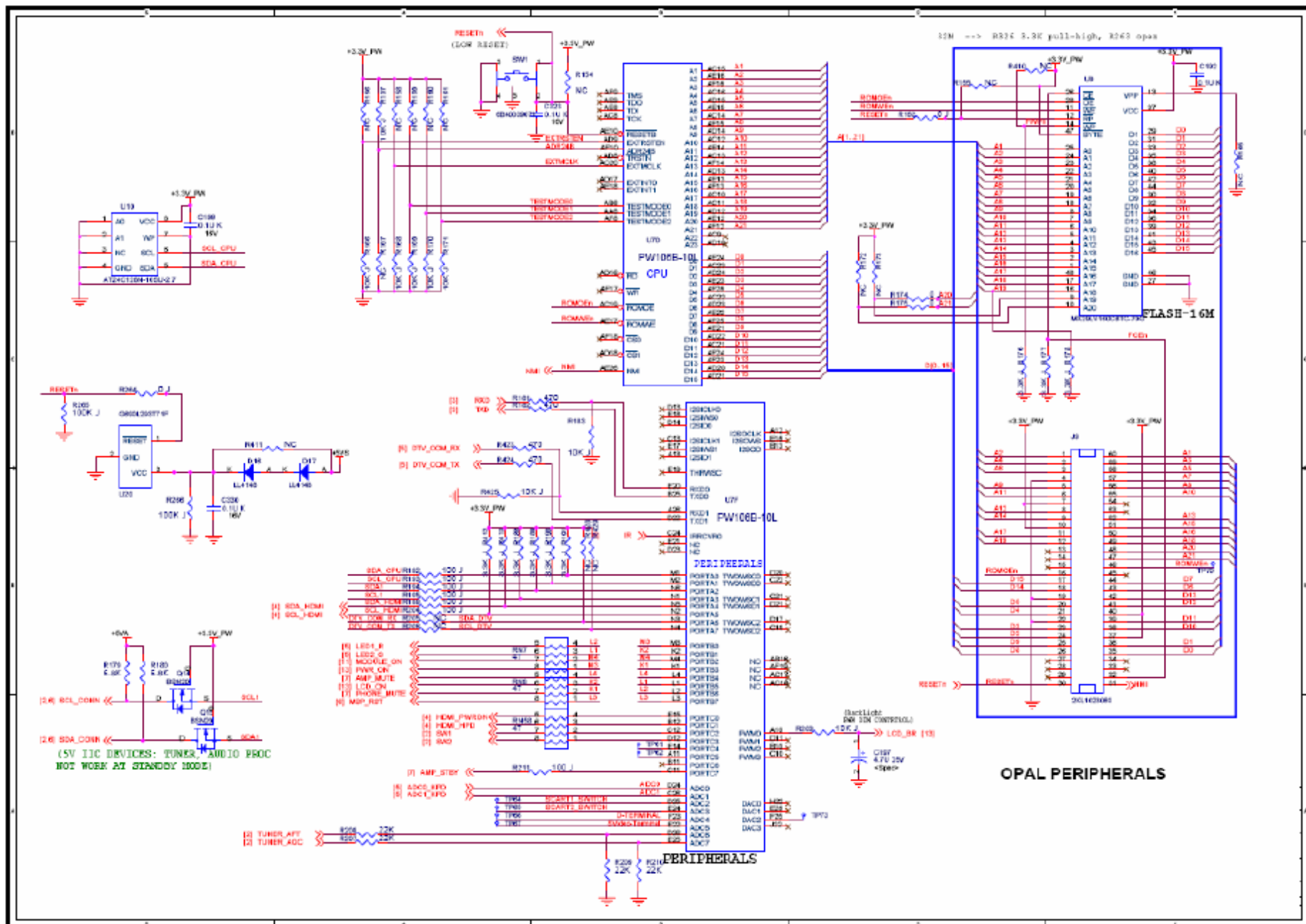


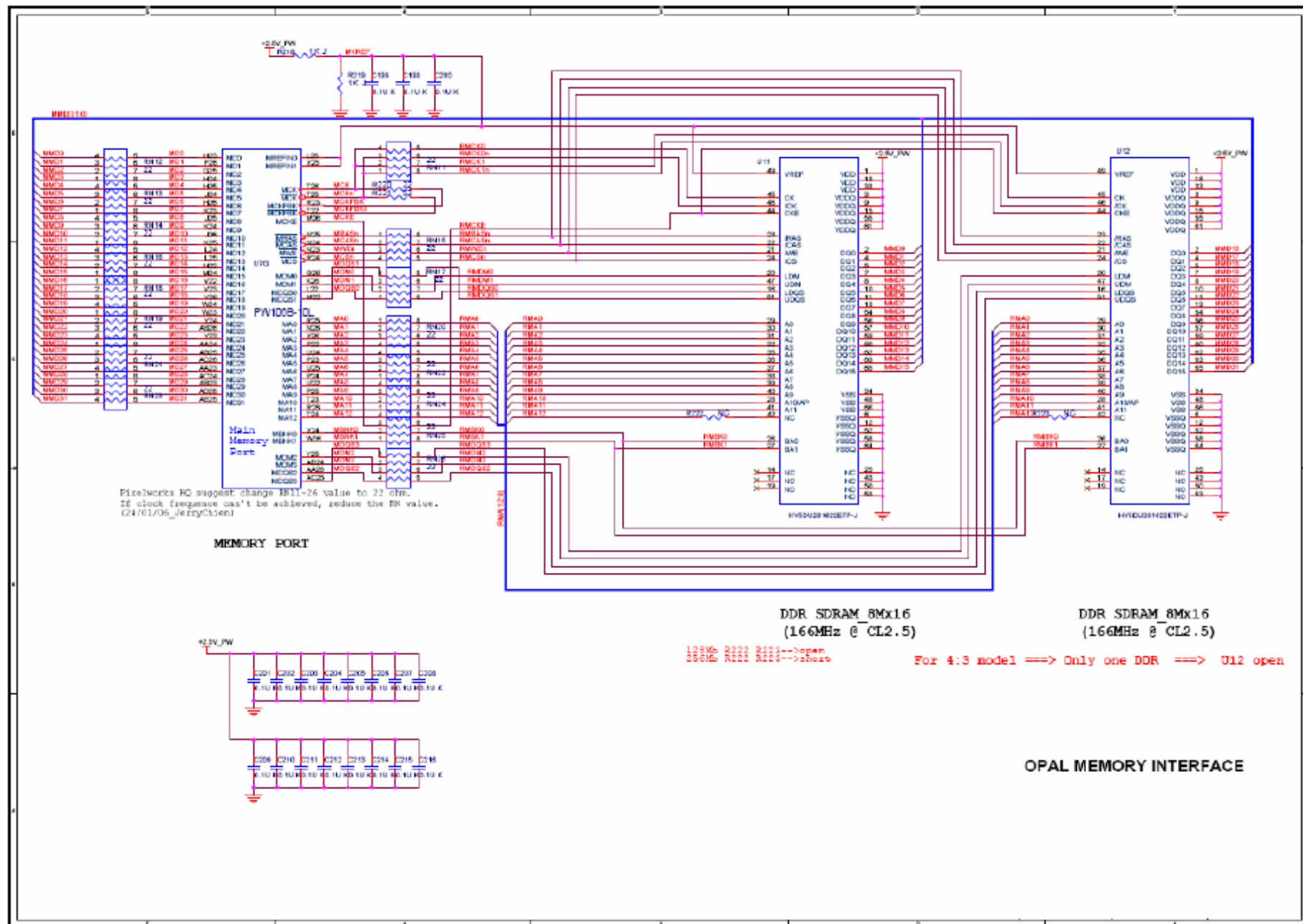


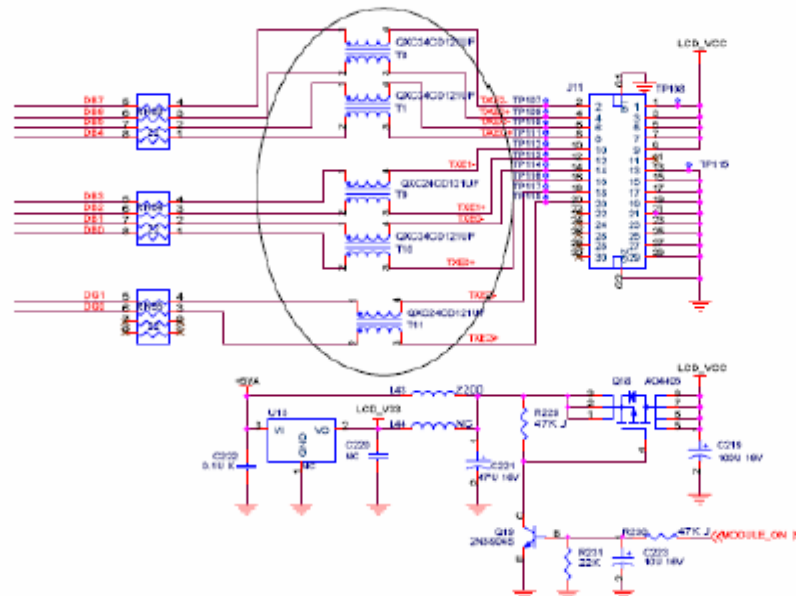
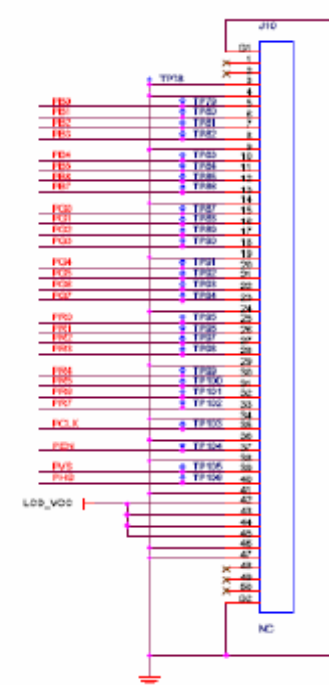
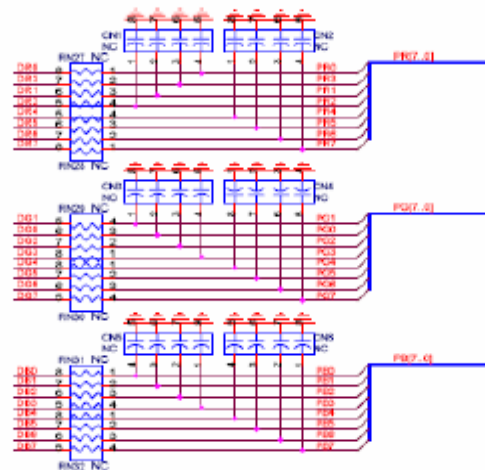
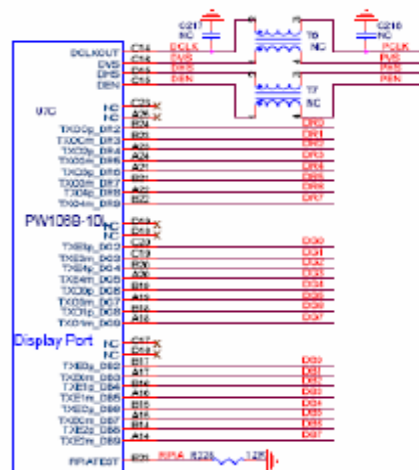










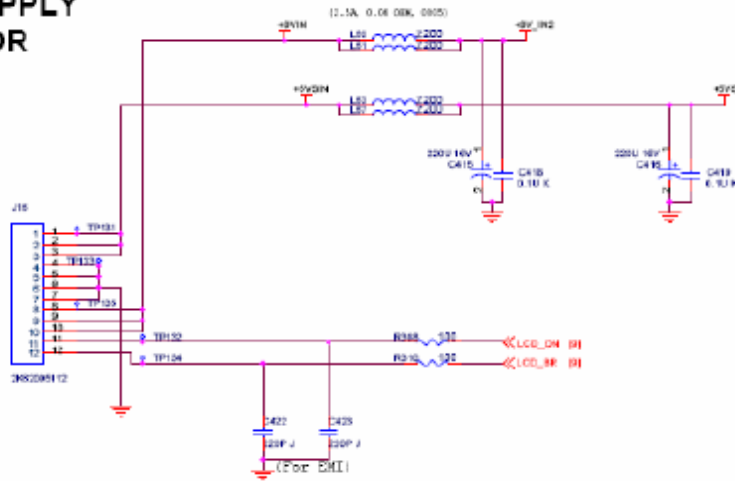


- 15' (LVDS 3.3V) : I43, RN27-RN32, J10 Open, I44, RN53-RN55, T1, U13, J11 and C220 add.
- 20' (DTL 5V) : I44, RN53-RN55, T1, J11, U13, C220 Open, I43, RN27-RN32, J10 add.
- 20"W (LVDS 5V) : I44, RN27-RN32, CN1-CN6, J10, U13, C220 Open, I43, RN53-RN55, T1, J11 add.

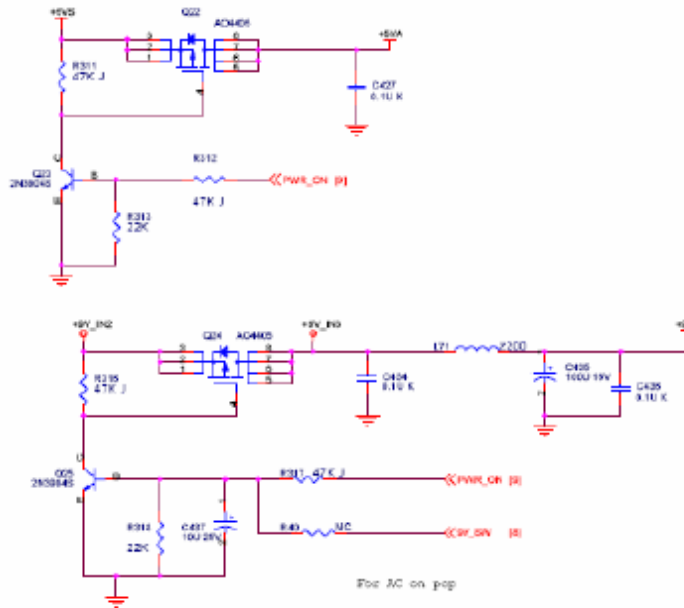
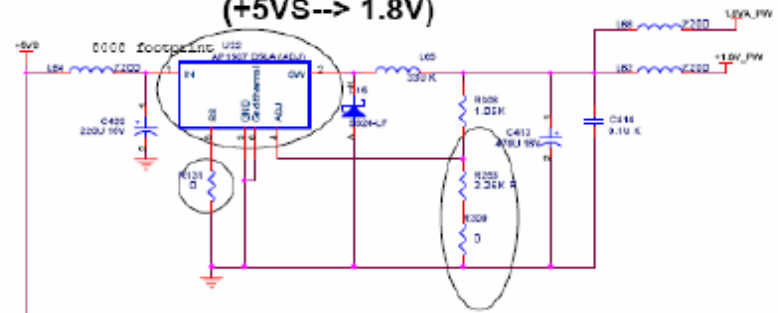
06_03_20_Jerry

OPAL DISPLAY PORT

POWER SUPPLY CONNECTOR



Switching Regulator (+5VS--> 1.8V)



[Current]

PW106=SNAX (Standing)

1.8V : 1350mA (20)

2.5V : 75mA	(0)
3.3V : 65mA	(7)

3.5V : 65mA (7)
=====

NMJ276926-MAX (Standby)

+5V_S : 20mA (2)

Abstract

PT2300SD->MPX (Standard)

+12V : 650mA (0)
=====

```

-----
IB=>MAX (Steady)

```

$$+5\% : 1.5\text{mA} \quad (1.5)$$

1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 11000 12000 13000 14000 15000 16000 17000 18000 19000 20000 21000 22000 23000 24000 25000 26000 27000 28000 29000 30000 31000 32000 33000 34000 35000 36000 37000 38000 39000 40000 41000 42000 43000 44000 45000 46000 47000 48000 49000 50000 51000 52000 53000 54000 55000 56000 57000 58000 59000 60000 61000 62000 63000 64000 65000 66000 67000 68000 69000 70000 71000 72000 73000 74000 75000 76000 77000 78000 79000 80000 81000 82000 83000 84000 85000 86000 87000 88000 89000 90000 91000 92000 93000 94000 95000 96000 97000 98000 99000 100000

LED=>MAX (Standby)
+5VDC = 10-3 = 4.12V

```

+SVS : 10mA      ( 10)
+-----+

```

```
15' LCD=>MAX (Standalone)
```

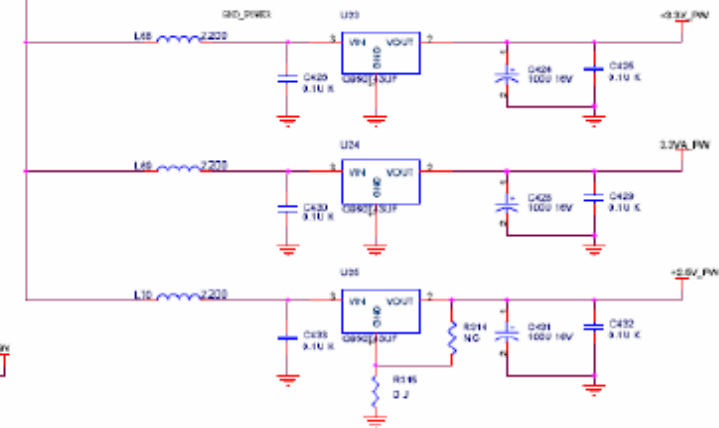
```
3.3V : 1100mA ( 0 )
```

100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000

20" LCD-MAX (Standby
+SVZ : 1000-2 : 10.1

45VA : 1000mA (0)

1000

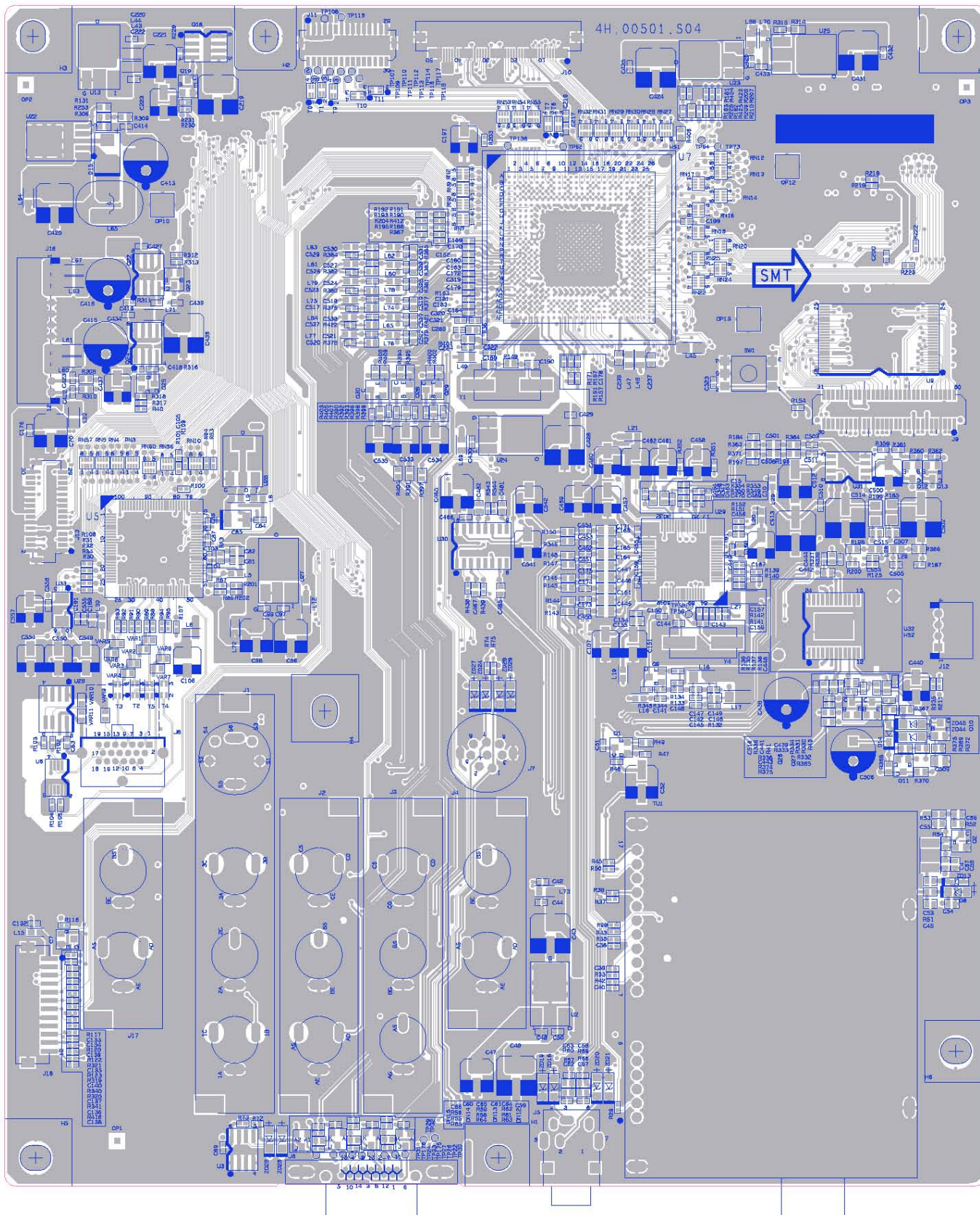


POWER

05_12_23	Start to prepare circuit			
06_01_20	Remove FM function			
06_03_20	Change R548 and R549 from 47K to 0 ohm; Add C40 (0.1U)	[P2]		
06_03_20	Change J6 to 2K.22014.015	[P3]		
06_03_20	Change R363 and R371 from 1K to 10K ohm	[P7]		
06_03_20	Del R224, R225, R226 and R227, Open C217 and C218, add T6 and T7		[P11]	
06_03_20	Add GPIO "9V_SW" and R39, R40	[P9][P13]		
06_03_24	Change C463, C464, C469, C470 to 1000P	[P6]		
06_03_24	Change R366, R337 to 13K ohm; Add R331 to 0 ohm, change ZD44 to 8C.6R203.036		[P7]	
06_03_24	Change U5 to AD9381-100	[P4]		
06_04_13	Change R320 and R321 to 20K	[P5]		
For S03				
06_04_27	Move D4 location, C31 NC	[P1]		
06_04_27	Add R99 location (NC)	[P2]		
06_04_27	Add R110 and R111 (0 ohm), R119 and R121 (NC)	[P3]		
06_04_27	Change R86-R95 from 10 ohm to 0 ohm; Change HDMI trace layout		[P4]	
06_04_27	Change R123 from 0 ohm to 100 ohm	[P5]		
06_04_27	Add D_GND and L27	[P6]		
06_04_27	R359 NC, C436 use dip type	[P7]		
06_04_27	Change R422, R376, R380, R382 and R384 from 36 ohm to 18 ohm; Change R378 from 34.8 ohm to 18 ohm		[P8]	
06_04_27	Change R421, R377, R379, R381, R383 and R385 from 39.2 ohm to 56 ohm	[P8]		
06_04_27	Add Heat-sink (only 16by9 model)		[P8]	
06_04_27	Change U22 from 7D.08008.040 to 7D.01507.04M	[P13]		
06_04_27	Delete C421 then Add R131 (0 ohm), (same location)	[P13]		
06_04_27	Change R253 from 180 ohm to 2.26K ohm; Change R309 from 619 ohm to 0 ohm		[P13]	
06_05_10	Change R378 from 18 ohm to 47 ohm, Change R379 from 56 ohm to 150 ohm.		[P8]	
06_05_10	Add U37 and C421; change U37 power voltage from TU_VCC5 to +9V_TUNER		[P2]	
For S04				
06_05_25	Change U37 power voltage from TU_VCC5 to +9V_TUNER	[P2]		
06_05_25	Add C10 and C15 location	[P2]		

PCB Drawing

This chapter is to show you the PCB drawing of the mainboard. If diagram detail is required, please open



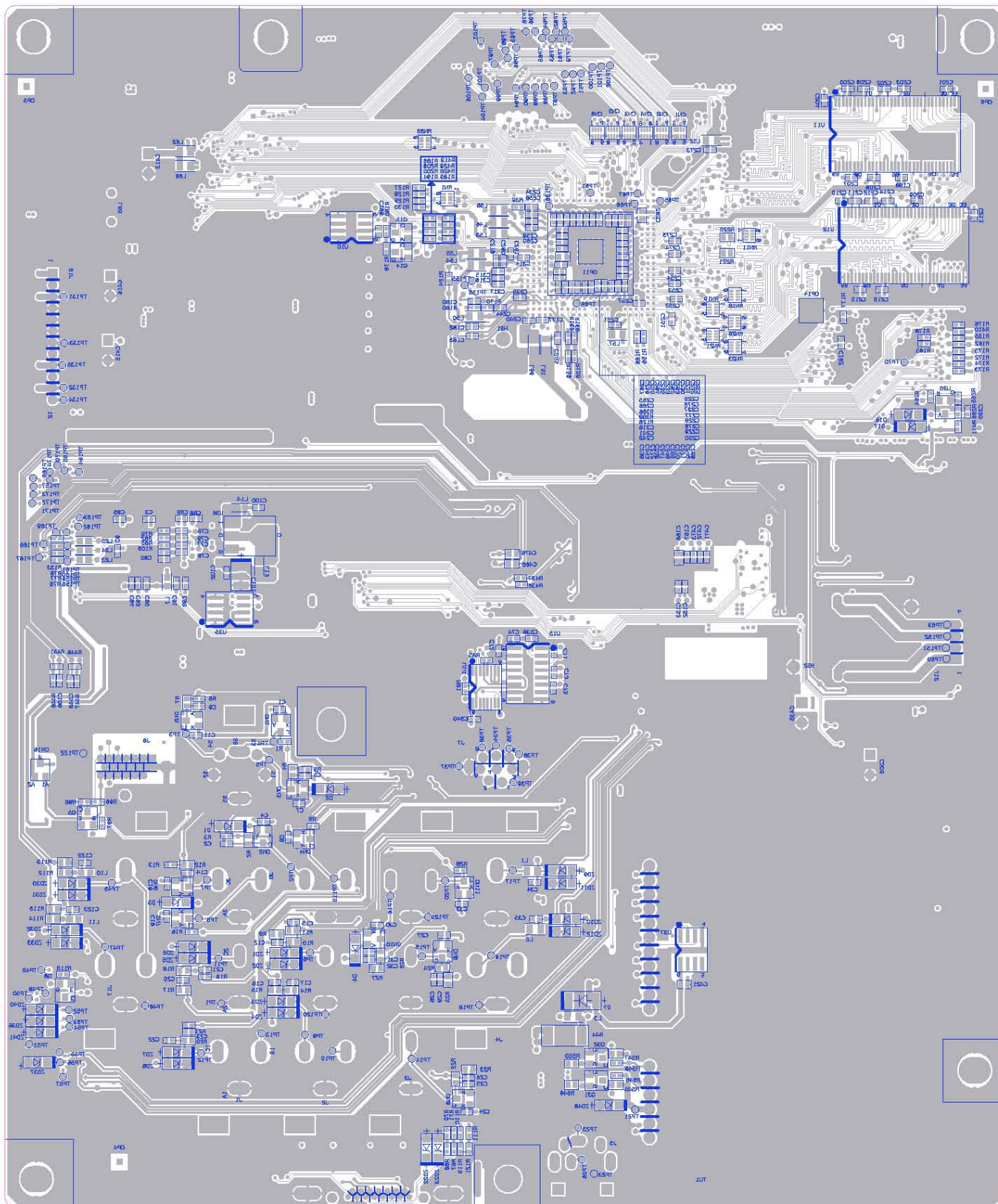
Impedance	
50Ω	X mil
80Ω	X mil
100Ω	X mil

BenQ

Layer: SILKSCREEN TOP	Part No.: 4H.00501.S04
Filename: Main BOARD	Date: 26/May/06 Rev.: XXX
Model No.: T20WH8	Sheet 3 of 11
Doc. No.:	

L1:COMP
L2:GND
L3:IN1
L4:BOTTOM

PCS:175 X 210 mm
PNL:350 X 220 mm (+/-0.127mm)
V-CUTX3



Impedance
50Ω X mil
80Ω X mil
100Ω X mil

BenQ

Layer: SILKSCREEN BOTTOM	Part No.: 4H.00501.S04
Filename: Main BOARD	Date: 26/May/06 Rev.: XXX
Model No.: T20WH8	Sheet 4 of 11
Doc. No.:	

L1: COMP
L2: GND
L3: IN1
L4: BOTTOM

PCS: 175 X 210 mm
PNL: 350 X 220 mm (+/-0.127mm)
V-CUT X3

Service Parts List

Toshiba Model Name				C	T	H	M	R	E	A	20VL65 R	20DL76/ 16
BenQ Model T20VV6 9J. 00401 T20WH8 9J. 00501				CNS	THS	HKS	MES	RSS	SGS	AUS	RUE	USS
Type	Parts Description	Toshiba PN	BenQ PN									
PCB PWR	PCBA PWR BD 70W EADP-70AF	75003704	5D.00501.001									☉
PCB PWR	PCBA PWR BD 70W EADP-70AFAA V1	75004843	5D.00501.021	☉	☉	☉	☉	☉	☉	☉	☉	
PCB MAIN	PCBA MAIN BD MI T20VV8 GA/CN	75004566	5E.00401.001	☉	☉	☉	☉	☉	☉	☉	☉	
PCB MAIN	PCBA MAIN BD MI T20VV8 USA	75004547	5E.00401.011									☉
PCB Key	PCBA KEYPAD BD T20WH8 MI	75003706	5E.00502.001	☉	☉	☉	☉	☉	☉	☉	☉	☉
PCB IR	PCBA IR BD T20WH8 MI	75003707	5E.00503.001	☉	☉	☉	☉	☉	☉	☉	☉	☉
Panel	LCDM A201SN02-V5 AUO	75004548	5F.91M64.011	☉	☉	☉	☉	☉	☉	☉	☉	☉
ME WIR	WIRE 12/12P 1571#28 320MM	75003710	5K.00501.001	☉	☉	☉	☉	☉	☉	☉	☉	☉
ME WIR	WIRE 12/12P 1007#26 120MM	75003711	5K.00502.001	☉	☉	☉	☉	☉	☉	☉	☉	☉
ME WIR	WIRE 4/4P 1571#28 90MM+G	75003713	5K.00505.001	☉	☉	☉	☉	☉	☉	☉	☉	☉
ME WIR	WIRE TEMP/TEMP 1617#22 60MM	75005931	5K.00508.001							☉		
ME SPK	SPK*2 16OHM 235/590MM PS-000	75005170	2C.40050.071	☉	☉	☉	☉	☉	☉	☉	☉	☉
ME RC	ASSY REAR CVR T20VV6-USS V1	75004553	6K.00404.002									☉
ME RC	ASSY REAR CVR T20VV6-CNS V1	75005932	6K.00404.012	☉	☉	☉	☉	☉	☉	☉	☉	
ME HIG	ASSY HINGE T20VV6	75003714	6E.00401.001	☉	☉	☉	☉	☉	☉	☉	☉	☉
ME BEZ	ASSY BEZEL T20VV6-USS	75004551	6K.00402.001									☉
ME BEZ	ASSY BEZEL T20VV6-CNS	75004569	6K.00402.011	☉	☉	☉		☉	☉	☉		
ME BAS	ASSY BASE T20VV6	75004552	6K.00403.001	☉	☉	☉	☉	☉	☉	☉	☉	☉

ME	FFC 50P P0.5 65MM+S T/T T20WH8	75004568	5K.00506.001	◎	◎	◎	◎	◎	◎	◎	◎	◎
ME	ASSY PLT D-SUB T20VV6	75004554	6K.00406.001	◎					◎			◎
ACC RCU	REMOTE CTRL CT-8006 GA	75004567	5F.26004.001		◎	◎	◎	◎	◎	◎	◎	
ACC RCU	REMOTE CTRL CT-8007 CNS	75004575	5F.26004.031	◎								
ACC RCU	REMOTE CTRL CT-885 GA	75003708	5F.26005.001									◎
ACC MNL	MANUAL S. CHINESE T20VV6	75004574	4J.00401.011	◎								
ACC MNL	MANUAL ENG/RUSSIA T20VV6	75005933	4J.00401.021					◎				
ACC MNL	MANUAL ENG/INDO T20VV6	75004565	4J.00401.031						◎			
ACC MNL	MANUAL ENG T20VV6	75005934	4J.00401.041							◎		
ACC MNL	MANUAL EN/TC T20VV6	75005935	4J.00401.051			◎						
ACC MNL	MANUAL THAI T20VV6	75005936	4J.00401.071		◎							
ACC MNL	MANUAL USER 20DL76 T20VV6	75004546	4J.00501.021									◎
ACC MNL	MANUAL EN/ARABIA T20VV6	75005937	4J.00401.001				◎				◎	
ACC MNL	MANUAL PERSIAN T20VV6	75005938	4J.00401.061				◎				◎	
ACC CTN	CTN AB T20VV6/US	75004573	4D.00401.001	◎								
ACC CTN	CTN AB T20VV6/US	75004542	4D.00401.002									◎
ACC CTN	CTN AB T20VV6/SINGAPORE	75004563	4D.00401.021		◎	◎	◎	◎	◎	◎	◎	
ACC CTN	CTN ASSY 350*240*48 T20WH8	75004543	4D.J0501.041	◎	◎	◎	◎	◎	◎	◎	◎	◎
ACC CSN	CSN TOP EPS T20VV6	75004544	4G.00401.001	◎	◎	◎	◎	◎	◎	◎	◎	◎
ACC CSN	CSN BTM EPS T20VV6	75004564	4G.00402.001	◎	◎	◎	◎	◎	◎	◎	◎	◎
ACC COD	CORD NISPT-2 SQUARE125V1.8M US	75003697	2G.01115.081									◎

ACC COD	CORD H03VVH-2 5A 250V 1.8M UK	75004562	2G.03135.001			⊙	⊙	⊙	⊙	⊙	⊙	
ACC COD	CORD RVV300 10A250V 1.8M 3C	75004572	2G.04215.041	⊙								
ACC COD	CORD H03VVH2-F2.5A250V1.8M RUS	75005939	2G.02456.001		⊙							
ACC BAG	BAG PE T20VV6	75003698	4B.00531.001	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙

TOSHIBA CORPORATION

1-1, SHIBAURA 1-CHOME, MINATO-KU, TOKYO 105-8001, JAPAN